

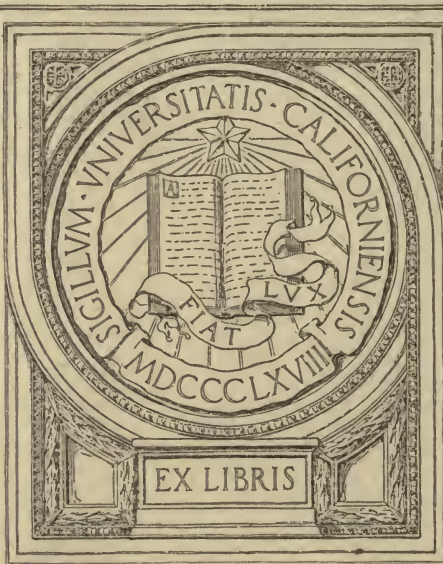
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EXTRACTS FROM THE DIARY OF A
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BIOLOGICAL PHYSICS PHYSIC & METAPHYSICS

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MEDICAL EXAMINER FOR BOARD OF TRADE, ETC.

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VOL. III.

METAPHYSICS

Circulatio Circulationum omnia Circulatio

LONDON

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METAPHYSICS.

EXTRACT I.

ON THE HUMAN ORGANISM PHYSICO-META- PHYSICALLY REGARDED.

THAT man is a composite being has been discovered and acknowledged, with more or less fulness and intelligence, since the beginning of the "thinking world"; that he is composed of mind and body is a truism, the validity of which is so apparent and reiterated, that from generation to generation it has been passed on from mind to mind in such unbroken continuity that it has become an almost innate psychological possession of the human race, and the starting-point of nearly all intellectual progress and civilisation. Although, therefore, one of the oldest of our foundation mental concepts, and a universally acknowledged truth, we think that the last word has not been, and never till the end of time, can be, said upon it, we, therefore, venture to express a few words more on the well-worn subject.

We have said that man is a composite being, and we would add that he embodies all varieties of organic life known to science, that is to say, he is composed of organic parts and textures known to the botanist, the zoologist, and the psychologist, not to mention the moralist, and that the embodiment of all these varieties of living matter and energy constitutes him the crown and acme of all organised being. The botanist discovers in the foundation protoplasmic matrix composing the various textures and organs of which he consists or is composed, an

organic material common to what is in everyday use in the vegetable world, while the zoologist convinces himself that a common protoplasmic element constitutes the foundation organic currency, so to speak, of the whole animal kingdom, the psychologist discovering that while man has much mentally in common with the pure systemic nervous system possessed animal world, he has much superadded of which nothing in common with his remote and near animal ancestry can be claimed to exist, and in virtue of which he claims his prerogative of lordship and predominance over the whole organic world.

Man may, therefore, be described as a telescopic unfolding of all the forms of life which have preceded him and with which he is at present surrounded, and the representative in his own person of the various forms of life, from the most rudimentary and elementary to the most complete and complex. Besides, in his moral nature and qualities he may be regarded as absolutely unique in the whole range of being, and as forming an absolutely new and higher kingdom of nature, with attributes and qualities, mental and metaphysical, which enable him to penetrate the outer world and to realise that he is not the Alpha and Omega of the universe, but that outside himself there is a great world into which he may, and can to some extent, project himself, and from which he may in turn realise that life *is really* "worth living" and that work is worth working.

The manner of telescoping his various phases of being may be described, comparatively, as follows, viz.: in an outer encasement of vegetative organisation, dominated and vitalised by his sympathetic nervature, is developed a systemic nervous system, which takes unto itself a skeletal support and a motor and sensory mechanism which influence and dominate his outer and surrounding vegetative encasement, and which in turn contribute an intermediate organised encasement for all his mental and "moral" faculties, with their energy producing, conserving, and distributing machinery, together with the "indwelling" of the absolutely intangible and immaterial components of his "inner man." Man may thus be said to be a thrice hollow and thrice filled being, in the intra-spaces and

containing areas of which he may figuratively be said to be thrice enfolded, the last fold being regarded as his *distinguishing* characteristic, and altogether entitling him to be regarded as *sui generis*.

Man, therefore, embodies in himself vital and structural characteristics in common with or common to the vegetable and animal kingdom, indicating the action and necessitating the possession of common formative energies and common plasmic constituent materials, the vegetable being represented by the foundation or pre-embryonic as well as fecundated ovular substances, and the original non-nervous structures so called of the fully developed organism, and the peculiarly animal, by the systemic nerve inspired or innervated texture succeeding the differentiation of the sympathetic and systemic nervous systems. When this, however, has been said and admitted, we are brought face to face with the untouched fact that we have not by this generalisation reached his higher and highest mental and moral nature or characteristics, which are only existent in the merest rudiments in the very highest ranges of the pre-human animal kingdom, and which in the lowest members of the human race exist only in embryo. Such a wide generalisation will, therefore, warrant us in accepting, and compels us to claim, the aid of that admirable working hypothesis the "*law of evolution*" in following out the scientific lines of research involved in the solution of such problems as the "descent of man," while it will, at the same time, bid the religionists in earnest with their work to take courage, because the improvement of the race is stamped on every page and stage of its history, written and unwritten, at once affording a foundation for their faith, and calling aloud to them to pursue unweariedly their benign work, while purging it of all influences which can clog and hinder it, whether in method or manner, in teaching or dogma, copying thus their co-scientific workers, who have to change their standpoints of belief day by day as fresh light is thrown by the progress or the march of truth.

"Truth, the whole truth, and nothing but the truth," so far as it is attainable, is, or should be, the common goal of all, of whatever "light and leading" they may be,

whether in the moral or intellectual world, and whether engaged in the conflict against error, the circumscription and removal of ignorance, or the obliteration of all influences which in any way militate against human advancement. If, therefore, religionists and scientists but recognise the fact which they sometimes unhappily overlook or conceal from themselves, that they are brothers in quest of different routes by which they may reach the same goal, and that they have duties which they each owe to the other and to common humanity, an impetus will be given to the general advancement of civilisation which cannot fail to be abundantly evident throughout the length and the breadth of the habitable world.

Truth will then have a chance of being recognised and appreciated, whether it be "revealed" or "discovered," in its full beauty, proportions, and stability, when disentangled from the encrustations of ancient fable and obscuring device, and reclaimed from crass ignorance, placed on a pedestal universally visible and uplifted, and approachable by all, however feebly inspired, who would enter its *great temple*.

Truth pillowed on miracle, overlain by an effortless faith, and asphyxiated by an overgrowth of sometimes parasitic influences, must at last yield to inertia and inanition, but truth standing firm on the rock of criticism and thrice repeated enquiry, animated by the free air and life-giving breezes of a militant faith, will advance and "cover the whole earth" as "the sea covers the channels of the deep."

Revelation and science will, thus united, give life and encouragement to each other, and help on the advent or arrival of that period, in the far-off future of the race, when the "millennium" and "perfected evolution" shall be *one accomplished fact*.

EXTRACT II.

THOUGHTS ON THE UNION, OR ONENESS, OF THE PHYSICAL AND THE METAPHYSICAL THROUGH- OUT THE UNIVERSE.

THAT *there is, and can be, only one universe, should now go without saying*; it always, however, has tacitly been, and is still held by exponents of both departments of knowledge—physical and metaphysical—from the earliest period of their history, that there are two, and each of these departments has acted towards the other as if it alone had any existence in truth. That this has been so has militated to some, we would say a great, extent against the general march of truth, as opposed to the advance of particular knowledge; it therefore seems that the respective points to which these two departments of knowledge have advanced, being now more nearly related in regard to contiguity and character of attainment than they have ever before been, it might well be with advantage to both, and to truth in general, if efforts were made to blend the structures of the two into one fabric, and, in future, that the progress of the truth as a whole should be made the goal of research.

Metaphysical truth for a long time made progress without the aid of physical help, while physical truth, a much later subject of research, has advanced with “leaps and bounds,” until she is parallel with the former, the two now occupying contiguous grounds, and necessitating, if both are to succeed in making further progress along closely related paths, that a combined *régime* of “give and take” should be observed between them, in order that

the universe and the knowledge of it, which has been so long tacitly understood as dual, should be recognised as one and indivisible.

Tentatively, for example, the combined field of knowledge might be occupied with an array of active searchers after truth, stretching from the astronomers, composed of physicists and mathematicians, turning on a central body of biologists, who in their turn would rest on and merge in that long existent and well-disciplined body of workers and speculators, the metaphysicians, philosophers, and theologians "pure and simple." The ends and aims of this combined array of militant searchers after the truth, *being found to be identical along the whole line*, it would necessarily be found that the common as well as the particular progress of the truth was receiving an impetus, and forward impulse, which could not fail to make itself felt to the most remote corners of the whole field of truth.

Besides union being strength, the fabric of universal truth would thus be strengthened, from below upwards, from within outwards, or from centre to periphery in such a way that the great object, the betterment of the human race as well as all departments of physical and moral work, would follow as the day follows the night in quite a natural and law-dependent way, proving that truth is not only one and indivisible, but that the progress of humanity along the lines of emancipation from disease, physical and moral, is dependent on the application of means dictated by a complete knowledge of the laws of the universe, physical and moral—moreover, the entire human family would thus be brought within the *same fold* of what is really *divine truth*, and it would be able, throughout its various races, to see eye to eye from one end to the other, and to direct its efforts with a *single eye* to the advancement of the true interests of the whole by the individual efforts of each; and so would be realised the prophetic utterance of Robert Burns, the "poet of humanity," when in an inspired moment he pronounced the faith "that man to man the world o'er should brithers be an a' that."

We have said that this *régime* should be adopted tentatively, but we claim that the necessity for it rests on

the sure basis of continuity and oneness throughout the *entire universe*, so to speak ; thus the matter, energy, and spirit, recognised and claimed as separate entities in the light of the most recent and special researches, not only co-exist but merge insensibly into each other, each dwelling in the other by degrees so regular and rhythmic as to constitute one cycle and one universal whole—the whole consisting with the inexorable necessity of continuity and oneness of all its parts, the one part being as essential as the other for the working of the whole with the absoluteness of “the reign of law.”

Matter is appreciable by the unaided senses in their immediate vicinity, and, distantly, by the aid of scientific instruments and faith in the existence of universal law ; energy, by the same means ; and spirit, by the use of scientific methods of observation and elimination, combined with “faith in the reality of things not seen” or appreciable by the senses, but apprehendable by the exercise of the human intellect in the highest and innermost regions of consciousness, and metaphysical analysis of intellectual being and phenomena. These three phases of recognised existences or entities, the physical, the dynamical, and the spiritual, constitute the cosmos, and for their proper study and definite appreciation, call for a combined as well as an individual study and research, in order that their independent, as well as their mutual and inter-dependent, working should be fully understood, so that the application of the resultant knowledge can be applied to whatever utilitarian purpose it is possible to adapt it, to the end that the right and proper *use of knowledge* should be the ultimate end and aim of entire humanity.

The accumulation of particular knowledge, and the relegation of its fragments to appropriate niches in the “temple of truth,” render it more and more necessary, and, in fact, essential, that besides the classification and proper arrangement of these facts, a general disposition of them should be made by which they can be viewed in relation to each other, with a view to the full appreciation of their respective proportions and inter-relationships, and the ultimate realisation of a complete mosaic, so to speak, of knowledge, in which the design of the pattern or picture

should emerge in all the majesty of the complete truth, no feature predominating over another, but all revealing themselves in true perspective, and adaptation to the wants of the whole. Thus it would once for all be seen, that no individual fragment was inconsistent with the truth of the whole, and, therefore, that every searcher after truth, however humble, in the commonwealth of knowledge, would find himself in entire accord with every other searcher, let the subject of his search be what it might in nature and apparent distance in time or space, and, therefore, that he was engaged in the great common work of forwarding the conquest of learning and civilisation, and adding one more stone to the great edifice of knowledge.

Thus, the individual worker, and the community of researchers, would have interests alike, and however hard they wrought, they would appreciate the great inspiring influence of feeling that they were engaged in the noblest work in which it is in the power of humanity to engage. Moreover, we make bold to say that "the dreams" of early humanity embraced some such thoughts, *when it had it revealed*, in whatever form, what are the great facts and teachings of "revelation," and the ends for which all things that are exist.

It is, we are persuaded, coming, that every exponent of truth throughout the whole commonwealth of knowledge will hasten to welcome every addition to its treasures by whomsoever contributed and whatsoever source it may have emanated, and that literally *the time is coming* when the theologian will shake hands with and embrace the physicist, that the metaphysician and the astronomer will agree in their mutual estimates of each other; and that, even within the province of humanitarianism, there will be found sufficient room for the best efforts of the socialist and the philanthropist. We, therefore, hopefully perceive, from reading between the lines of contemporary as well as past history, that the universal drift of the "currents of human events" shows a growing disposition on the part of the leaders of thought and action, in all departments of knowledge, to take advice and to accept assistance from every available quarter and source possible.

This, then, surely means much when viewed in relationship to the future destinies of the human race, and all terrestrial problems involved in these destinies, individual, communal, and affiliated.

The unification and focussing of knowledge, and its combined application to the wants of humanity, physical, mental, and spiritual, constitute of a certainty a great and irresistible lever for the raising of man to a higher position in the hierarchy of being, and offer a wider and fuller view of the necessities of his situation than have presented themselves for many a day, and should infuse new life and enthusiasm into his efforts after the good and the true in all walks of life, and into the performance of everything "his hand findeth to do" "of true and good report."

Universal truth thus recognised, and applied to the everyday wants and requirements, physical, intellectual, and moral, of man, will secure his emancipation from the thralldom of original and acquired idiosyncrasies, and bring him in touch with and under the shaping influence of all that is best and necessary for his successful occupation of his particular "niche" in this world and the place for which he is adapted in the next by "first intention" and the *working out of his own destiny*.

In this connection, and as a natural continuation of the study of all the so-called physical, intellectual, and moral influences and developmental factors moulding the character of man, individual and communal, it becomes apparent that the religious developments from the earliest periods of the history of the human race have been the consequences of impulses arising from an all-pervading conviction that man's destiny did not begin and end with the ordinary, shorter or longer, span of life, but that that life was merely preliminary, and determinative of the direction in which it was destined to progress. That conviction being based on an innate or inbred "feeling," held more or less strongly by all branches of the race, and supported by the latest "findings" of science, compels the further consideration of the probable destiny of man and the possibilities in wait for his ever-living principle, the impelling and compelling imperishable force composing *his ego*, in order that he should be satisfied in his innermost self that

he is making a proper, if not the best, use of his life here for continuing it with the best results hereafter.

Any attempt at a solution of the transcendental problems herein involved must feel almost an act of impiety on the part of the attempter. We, therefore, disclaim all intention of going beyond the limits imposed by the *method and manner* of our approach to the subject and the light which the conclusions we have been able to draw from the *assortment* of our "Science siftings" have enabled us to shed on them and to penetrate them.

It ought to be mentioned here that, so far as we possess the historical knowledge on the subject, we are warranted in saying that every nationality, even every important community, tribe, and so-called thinking individual, has *more or less displayed a belief*, implied or expressed, in the reality of the existence of an after state when that here enjoyed has been spent to its close, and that around this belief have clustered influences of the most potent order in the formation of human character and the direction of human motives—influences which in many instances have culminated in the evolution and development of cults and the development of religious systems. That this is "a natural outcome" of the operation of "natural cause and effect" we would claim to be a great truth, and that it should be encouraged and its growth maintained we claim as equally imperatively demanded, in order that its growth should be along the lines of the greatest good to the greatest number, with the intent that its ultimate full development should be perfected, so that the here and the hereafter of man should form one indissoluble whole, meeting the requirements of the Author and Governor of all the universe. Therefore, respect for all such systems, from the most rudimentary individual religious beliefs to the most fully developed and perfect forms of worship and codes of morals, must in strict justice be held, and every liberty given for the growth of religious opinion, in order that the best and noblest influences in moulding the final destinies of humanity should have the results attainable by the "survival of the fittest."

While thus the teachings of science and of religious systems developed in the moral world, the universally

existent innate longings of humanity for a higher and better life, and the ever-increasing strength of the great graces of "faith, hope, and charity," continue to dominate the progress of events, it must follow, as an absolute fulfilment of Holy Writ, that humanity must mount for ever and ever the scale of being, until it enters upon that phase which "it has not yet entered into the mind of man to conceive," but which will inevitably follow, in continuous growth, along the lines on which it was *projected*.

It, therefore, in conclusion, follows that the physical and metaphysical throughout the universe of nature *form a whole, one and indivisible*, which merges in the spiritual, the whole constituting one system without beginning and without end, complete, and ultimately harmonious, throughout its whole extent, all friction in its working, and all limitation in the completeness of its operations removed, and the meeting of its every requirement being achieved, the success of the whole will be made absolutely and for ever manifest.

EXTRACT III.

PHYSIOLOGICO-PSYCHOLOGICAL—OR ANATOMY TRANSCENDENTAL. IN SEARCH OF THE DWELLING-PLACE OR HOME OF THE *EGO*.

IN all ages, or ever since man began to *think seriously*, the search after the manner of his material and mental union has aroused his curiosity, stimulated his thought, and quickened his consciousness, and has afforded an ever-recurrent theme for the flight of his poetry and a text for his more prosaic dissertation.

The search has been more or less attempted in every generation—sometimes with more apparent success and sometimes with less, but always with an absorbing interest which has kept alive his belief in his dual nature and destiny.

In the early ages, and even yet, man has referred to his heart as the centre of his material being and the dwelling-place of his soul, and, in his most solemn moments, has appealed to it for guidance and sought its dictates.

Time, however, and the exercise of the powers of human observation and thought, have gradually lessened the hold of this belief on the human family, and the advent of anatomical, physiological, and psychological research has driven it into anatomical obscurity, and compelled its votaries to recognise the *brain* as the *habitat* and scene of mental operations—the metaphysician following at last, and saying to *this*—Amen!

Since the advent of these new views, the curious in anatomy, or at least some of them, have at different

times pointed out certain cerebral structures as the particular dwelling-place of the mind or soul ; but these have in turn been discarded, or fallen into abeyance, and we consequently *still* find ourselves engaged in this old but ever new task of *research*.

In this search we confess we have, like our forefathers, been always more or less interested, and, like some of them, we feel inclined to throw our "stone," or moiety of thought, on the "cairn" of research ; and in performing this self-imposed task we are deeply conscious of the difficulties surrounding our position—difficulties in the way of being able to say anything new or true on the subject, and difficulties arising from *scientific inability*, so to speak, *adequately to grasp such a piece of transcendentalism*.

In beginning the work of research, we feel it our first duty to clear the ground of encumbrances in order to lay bare the material basis or anatomical framework, or the biological strata, on, and in, which we think it possible to reach the actual material dwelling-place, habitat, or home of the mind.

The work of baring or clearing away, or the process of structural elimination, necessitates the removal of all the outer coverings or envelopes of the brain, which (coverings) may be looked upon as merely protecting and supporting and as constituting the outer framework or scaffolding through which is passed out and in what is necessary to meet the materio-dynamic wants of the organism within.

Having accomplished this work of baring or clearing away, we reveal the large and complex series of structures called the brain and upper part or root of the spinal cord, or, technically, the organs known as the *cerebrum*, *cerebellum*, *pons Varolii*, and *medulla oblongata*.

Modern anatomy has done much to elucidate the topography of these intra-cranial organisms, and to fix and localise the *centres* of the various peripheral *nerve supplies*, but into this it will be unnecessary for our present purpose to enter, we therefore pass over this most interesting but, in the meantime, irrelevant region of the subject.

The greater part of the brain substance proper is composed or made up of a substance or material called the neuroglia, the matrix or stroma of which constitutes the foundation texture or framework of all the parts of the nervous system enumerated above, a substance which is composed of a great series of minute sympathetically innervated cells, connected by a meshwork of uniting and intervening very minute fibres or fibrils, amid which is strown, or into the interstices of which is filled, from the capillaries of the blood circulation, a great mass, or as much as the structure can hold, of an amorphous or finely granular material.

This substance, the neuroglia, we must regard as the soil, so to speak, on and in which the various neurons, composing the systemic nervous system generally, take root and grow and from which they extract their constantly required nourishment.

The neuron, or unit of nerve texture, may be described as a cell composed of its containing wall and its contents, having attached and continuous with it a series of processes called the dendritic and axonal, the former, the dendritic processes, or dendrons, with their attached gemmules, seeming to us to perform the functions of rootlets—to which, by the way, they bear a great resemblance—in the neuroglial soil or substance, and to take up the nourishment on which the cell grows, while the latter or axonal processes, or axons, become continuous with what is called the medullary and the axis-cylinder or inner and conducting substances of the nerve fibre.

The intra-cellular substance proper consists of and becomes continuous with the “white substance of Schwann,” which constitutes the great insulating and protecting envelope of the greatest part of the nerve fibres distributed throughout the various structures of the body.

Inside this intra-cellular covering of what we have called “the white substance of Schwann,” or the medullary substance, and enclosed in its own containing membrane or wall, is the nucleus. This nucleus in turn is found to contain, within its containing envelope, a substance which may be regarded as continuous with the axis-cylinder of the nerve-fibre, proceeding or springing from it, and

hence which may be further regarded as the proper nerve substance, or *the substance the molecular affection of which conveys those impulses called nervous*.

We shall now ask ourselves the question, and what here seems to us to be the question of questions, viz. : *Whence and whither* are these nerve impulses most probably conveyed? and we think there can only be one answer given, if what we have here stated be true. The nerve impulses are conveyed *to* the *nucleoli* of the nuclei of the cells, the only structures of the neurons remaining undescribed and unaccounted for, *through* the axis-cylinders of the sensory nerves from their "nerve endings," on the one hand, and *from* these nucleoli themselves, which initiate and determine them and pass them outwards *through* the various motor nerves to their "nerve endings," on the other.

The nucleolar structures of the neurons of the brain proper, or *cerebrum*, and it may be of some of the higher related basal centres, *thus become*, and we contend *must be recognised as*, what we are in search of, viz. *the Dwelling-place or Home of the Ego*.

The nucleoli of the cerebral and higher basal neurons must thus be regarded as the most highly functioned and organised structures of the body, as the most deeply sensitive, receptive and retentive, and consequently as the most finally poised and explosive. *Hence*, emotion, volition, and "staying-power" in the healthy, and the "nerve storms" in the diseased.

In arriving at this conclusion we have guided ourselves by a process of structural elimination, and in searching for the various possible "dwelling-places of the *ego*" to be found throughout our bodies, we first of all eliminated the organs and structures external and inferior to the brain; and in the brain itself we have, in a like manner, eliminated the neuroglial substance proper, as only affording the soil on, and in, which the neurons, of which the higher organisms of the nervous system are composed, grow, and from which they develop and derive continual sustenance. These two eliminations leave us with the neurons, the consideration of which in their complete details in turn leaves us with, after the elimination of the

cells and their nuclei, the residual *nucleolar units*, the *totality of which* constitutes the material basis of mind, or, in other words, the dwelling-place or home of the mind, or *Ego*.

Here, amid the teeming activities of the brain, the ebbs and flows of intra-cranial circulation, the endless processes of disintegration and repair of its material mechanism—*here*, amid the tumult of atomic change, the buzz and whirl of molecular displacement and restoration—*here*, in the ceaseless surge and throb of the *loom of thought*, with its recurrent intervals of blessed rest and repose, dwells the presiding Psyche, burnishing the “wheels within wheels” of her reason, polishing the keen shafts of her wit, hugging her griefs, and shedding her “silent tears,” “nursing her wraths,” and pronouncing her anathemas in alternate moods of heat and cold, prose and poetry.

Here is the home of the human microcosm, where the coiled and twisted chains of “the association of ideas” are forged on the anvils of time, as it pursues its rapid course into the abyss of eternity. *Here*, nevertheless, in the tiny cosmos of this nucleolar sphere, the Everlasting Spirit of the great cosmos can come in and hold converse with its tenant. Yea *here*, surely, is the spot where the Infinitely Great and the infinitely little can meet, commingle, and become one. *Yet here*, amid the flux and re-flux of high motives and noble ambitions, sordid aims and unappeased yearnings, in an atmosphere of hopes and fears—why should we not say it?—dwells the soul of man.

Herein, indeed, *dwells the mind, the Ego*, indivisible from and incorporated with, but yet *superior to its environment*, and in a sense a “*free agent*.” *Herein*, in this “debatable land,” lies wrapped up as in a nutshell the inscrutable mystery of immortality. *Herein* repose, in the archives of memory, the long list of negatives and positives which the mind has photographed and stored up during its course, and the uncountable number of mental “goods and chattels” which its owner has possessed himself of as the result of his life’s work and endeavours. *Herein*, also, is the “court of the temple of appeal,” where the conscience-stricken sufferer can be tried and condemned

or acquitted by his own showing and on his own evidence, and where he can be made to feel in his own physico-mental being a foretaste of a "*coming*" *futurity*. Here, *finally*, the *Ego*, by itself, is the *sum*, the Alpha and Omega, the beginning and end of life, the active and directing agency in all that man thinks, says, and does. What, therefore, should be the "*creed*," the end and aim of every seriously thinking member of the human family? Is it not to possess himself and herself of, in the words of the great and oft-quoted Celsus: *Mens sana in corpore sano*.

The material dwelling-place of the *Ego* being healthful and sanitary in all its parts, its mechanism being maintained in perfect order, its force-receiving, conserving, initiating, and conducting machinery being absolutely intact and in full working order, it must follow that everything which humanity at its best can accomplish will be accomplished, and that, given a steady repetition of such exalted *ideals* of humanity in the ages to come, *civilisation must progress* with "leaps and bounds."

The picture is, however, terrible and disappointing when we consider and realise the myriads of influences at work daily in the retardation of this work of civilisation, the almost impossibility of maintaining a uniformly high rate or level of progress amongst the varying nationalities of the world, the tendency to retrogression evidenced on the part of those nations who have reached what may be called the "*high-water mark*" of civilisation, and the large amount of general "*cussedness*" observable amongst the individual members of the human race. But this is the language of metaphor, and we forbear lest we endanger the *truth* and *cogency* of our *scientific research*.

All the deftly woven textures and wrappings which make and constitute the dwelling-place of the *Ego* are, so to speak, but the "*clothes*"—in Carlylean phraseology—of the soul or spirit—this latter being the immaterial and indestructible "*material*," so to speak, of our being, and representing the *irreducible residuum* of that being at its death.

The totality of the higher cerebral nucleoli, or, at any rate, those of the *psychic cells*, as has already been said,

constitute the dwelling-place of the *Ego*—secured and protected by their surrounding nuclei and their proper enclosing textures, and encapsuled by the cell protoplasm with its containing wall—and become the working neuronic structures of our conscious being, aided by the systemic nervous system, insulated by and encased in its peri-neural sheaths, the neuroglial matrix of particle, cell, and fibre forming the foundation of that dwelling-place, while the great blood circulation, with its innumerable vessels and wonderfully constructed hydraulic machinery, its preceding, digesting, and assorting apparatuses, constituting its buttressing and supports, the related and attached mobile musculature and articulated bony skeleton affording a moving platform for its peregrination of the world around it.

Here and in all this we can only perceive that the governing principle underlying these material parts *can but be* immaterial, hence indestructible, and capable of continued existence, and therefore, that this, the only living and governing principle within our human organism, must be—for want of another name—what has for ages been called our *spirit* or *soul*, as distinguished from the purely *mental part* of our being, with the attributes of immateriality, indestructibility, and *consequent* immortality.

Along this path of material enquiry and speculation, we think we can claim to descry, amid the depths of the increasing gloom of failing intellectual sight, faint streaks of the everlasting light, as they fall on the inner sight of the soul through its environment of “clay,” its mortal wrappings, and material impedimenta.

In this region, religion and science may surely and consistently join hands, and mutually acknowledge that there is room, warrant, and necessity for both, in shaping the destiny of the human race, and hastening the advent of that period when all contradictions and friction, inherent in the possession of “a little knowledge,” will cease, and merge in the harmony and majesty of revealed, to be revealed, and absolutely perfect, truth.

In this region, moreover, we may recognise a common ground, whereon the searchers after the truth in all the manifold, and widely divided fields of research, physical

and metaphysical, constituting the commonwealth of knowledge, can meet and agree, that they belong to the same noble army of searchers, that their goal is the same, viz. *the truth*, and that the truth cannot contradict itself, and therefore that their efforts and working powers, must or should be directed to the accomplishment of common ends and purposes, so as once again to prove the cogency of the old adage, that "in union there is strength," and thus, or so, open up the way to the fullest possible exercise of the graces of "faith, hope, and charity." The exponents of revealed truth, and the searchers after the truth hidden in the pages of the material world, organic and inorganic, are thus brought into touch, and pressing forward in their united struggle of informing the ignorant, and clearing the world of error, their power for good will be increased indefinitely and precisely in all directions, morally, intellectually, and physically.

EXTRACT IV.

A STUDY IN CONTINUATION OF THAT ON THE DWELLING-PLACE OF THE MIND OR EGO.

It has been held, "all along the ages," that man is made up of mind and matter, and interpolated in, or engrafted on, the continuity of this belief, we find references to the indwelling in humanity, as distinguished from animality, of a third principle in this complex, known as spirit. These three individual entities or principles, therefore, constitute the great verities, physical and metaphysical, known to and discussed by philosophy from its origin in the pre-historic ages down to the present day; the nature of each, their relative importance in the economy of the tripartite whole, and their relationships to each other in the present life and future destiny of being, all affording ample and never-ending subjects for the keen scrutiny of the acutest intellects, and the subtlest exercise of the most persuasive pens and tongues amongst the learned of the successive periods of the world's history.

In contributing this attempt at a further elucidation of such a well-worn subject, it seems to us unnecessary to enter into an expiscation of its genesis and evolution, we shall therefore content ourselves with an expression of our belief in the verity of this *system of knowledge*, which inter-penetrates, surrounds, and innervates all the teaching of the men of "light and leading" known to philosophy, ancient and modern.

The summary of the three great principles or entities entering into the composition of man seems to us complete and impossible to improve upon, *i.e.* matter, mind,

and spirit. The order, also, as thus arranged, seems to us to express the sequence of evolutionary events or processes culminating in the production of complete manhood—thus, the preliminary material foundation is laid and the superstructure built up by the initial molecular disposition and final organic arrangements respectively characterising the origin and growth of man, while mind is evolved from, and consists in, the exercise of energy or force, through, and by, the molecular and organic arrangements of matter, the resultant living, acting, and reasoning binary product *becoming* inter-penetrated, and ultimately dominated by an “indwelling spirit,” or absolutely non-material and ultra-mental energising principle or essence which, from its non-possession of material and finite characteristics, may be regarded as continually existent and consequently *immortal*. We therefore conclude—inverting the order—that spirit dominates mind, and that mind dominates matter in the economy of life and action—in other words, matter forms the dwelling, mind the occupying tenant, and spirit the owner and disposer—in the destiny of the human microcosm so far as that destiny is wrought out on the lines of individual responsibility.

EXTRACT V.

ON INNERVATION AND ENERVATION.

THESE are words the history of whose evolution, from the nebulous and faintly intelligible, into two of the most profoundly expressive terms in literature and science, it would be both interesting and educative to follow, inasmuch as the work would involve a study of the universe in its progress from chaos to order, and its conversion from dead, to living, form, with all the "reversions" to be observed in nature from the living to the dead, and from the high-water mark, or acme of fitness, to the "slough" of complete failure and ineptitude in men and animals, nations and individuals, genera and species.

Originally they took their origin in the expression of truths of the most primitive and elementary order, but by daily usage they have come to express the ultimate conditions of organic and human life and death, the long sequences of evolutionary and involutionary events characterising the vital experience and destiny of every organic unit since the dawn of creation. Moreover, they individually and respectively stand for life, action, consciousness, thought, and responsibility, with all that hinges upon, and flows from, these things, and devitalisation, inaction, soporism, "blank intelligence," and irresolute nothingness, with their concomitants and consequences.

Innervation has assumed a scientific form from its long use in the service of physical research, while enervation has been taken possession of, painfully tended and

elaborated, and made to do duty by some writers of biography and history, some purveyors of popular literature, and some delineators of pictorial character, and has had its decaying elements quasi-resuscitated and served up with many a condiment to conceal their corruption, and to engender and maintain a *taste* for the ephemeral and transitory to satisfy a human appetite worthy of being appeased by better and more lasting things.

Innervation expresses the rule of energy and intelligence over matter, the redemption of the inert world from its long lethargy by the circulation through it of impulse and motion, the organisation of its awakened elements into definite forms, and the inspiration of these by ever-increasing degrees of intelligence until their condition has become one in which the highest attributes of humanity can be implanted, and a destiny devised for it which is yet too transcendental to permit of more than a longing desire on the part of humanity to anticipate its advent, and to indulge in a "glimpse behind the veil" of "coming events," which here so realistically and fascinatingly "cast their shadows before," but which shadows are, of necessity, incapable of appreciation by the obtuse, and still half material, intelligences of humanity.

Enervation on the contrary expresses a survival of the ancient law of inertia, and the tendency of matter ever to resist the influence of impulse and to resume if disturbed the *status quo ante*, thus indicating an unwillingness to lend itself to the operation of assuming new forms with all that follows from intelligently altered conditions, with the subsequent and consequent evolution of higher and better present states, and inconceivably sublime future destinies. As seen in operation in the present day, enervation clogs and stays the evolutionary wheels of organic progress in their ordered course, paralyses the efforts of labouring nature to accomplish her plans and purposes, brings to naught the "best laid schemes of mice and men" to meet the ends of their existence, and infests with "dry and wet rot" much of the best work of civilisation and human advancement, thus slowing or preventing the application of ameliorative laws and influence to the reign of pain and sorrow.

Innervation is ever affirmative and progressive in its operations, enervation, negative and retrograde ; in their mutual relations, however, wherever fully realised throughout the universe, and understood as the method by which the great work of evolution—in its widest and highest sense—is being wrought out and fulfilled, it is impossible to conceive otherwise than that they constitute two indissoluble parts of a great whole. And thus they may be said to justify and necessitate the contemporary existence of apparently incompatible elements in the structure of universal nature and revelation—a conclusion which becomes at once the solvent of such world-long enigmas as the co-existence of organic and inorganic matter, life and death, good and evil, time and eternity.

Furthermore, they not infrequently shape the views of mankind regarding the present and the future of the race, in its collective but more especially in its individual aspects, enervation *tempting* to the conclusion that death terminates human as well as all existence, that resolution of the complex human organism into its component inorganic elements for ever closes the chapter of its life, and that becoming “food for the worms” and adding humus to the soil is all that is in store for it ; innervation, on the other hand, *demanding*, on the authority of the innate longings after immortality implanted “in the human breast,” the final teachings of untrammelled science, in the chastened spirit of truth and reverence, the whole body of revealed truth as is to be found in the epoch-making “Scriptures” and the works of “light and leading” left by the subtlest and best intellects all along the ages—the conclusions that there is no end to life, and that from its absolute indestructibility it must continue for ever to animate an organism fitted for its evolutionary development and exercise throughout “the endless ages of eternity.”

A conclusion thus warranted and demanded must, therefore, become by the united strength of individual desire, the consensus of scientific conviction, and the boldly expressed belief of revealed truth, a potent instrument and influence in the elevation of the final, temporal, and eternal destiny of the human race. For such work,

and its full accomplishment, it thus behoves all these influences for good to merge, and with their united powers to devote their full and undivided strength to the accomplishment of the one great object. The "millennium" may then be realised! Who can say?

EXTRACT VI.

ON SOME OF THE "FINDINGS" OF MODERN SCIENCE AS TO THE DUPLEX, OR COMPOSITE, BEING OF MAN.

THAT the beliefs entertained by our forefathers regarding this subject were, in many respects, far ahead of those held by their children of the present day there is, we think, not the least doubt—that these beliefs were definitely stated in the form of creeds, or in words of logical precision, is another matter, however, so we shall content ourselves here by simply recapitulating a few of the everyday expressions used by some of them in their literary remains, and a few popular expressions of the present day, which are evidently fashioned from these and from altogether spoken sources transmitted to us as folk "sayings," *i.e.* emanating from early times, and still current in the language of the people as well as in literary non-scientific nomenclature, sacred and secular. Thus, "he is beside himself," "he is out of his mind," "he is possessed," and other forms of expression used to indicate *mental alienation*, rest on the belief that their subject could exist both inside and outside of his body in virtue of his being possessed of a mind or spirit which could be displaced or dispossessed and replaced, as when a condition of mental soundness or "wholeness" was once more attained, or when he had again "taken possession of himself" and dispossessed the usurping "spirit."

On the belief, held by the ancients, that man's nature was duplex or composite, there grew up the further belief that his better self, spirit, or *Ego* could be temporarily or permanently dispossessed by another spirit,

or other spirits, and that he could be made the receptacle for the use of such spirit or spirits, and for the carrying out of their behests whether they might be good or evil ; but to follow out this enquiry would lead us too far afield, we must, therefore, return to the finding of modern science on the title of our present thesis. In doing so we need not repeat what we have already written on the subject of the duality of the human nervous system, further than that we have found that system to be composed of a sympathetic and a systemic, half each of which can act alone or individually, or in conjunction, and that each of these two halves, although able to work conjointly, has allotted to it an entirely separate and different field of work, and that both are essential to the integrity and maintenance of the duplex organism which they jointly innervate.

As a physical basis on which to erect an estimate of modern scientific opinion on the subject, we think it will be of service in combining the data accumulated by modern research and speculation if we take advantage of the manner of evolution of these two systems of innervation and place the details of its accomplishment in that order of sequence which will enable us, as securely as enquiry into such transcendental subjects can do, to come to rational and sound conclusions.

In relationship to the phenomena of life, we must take it that inorganic matter and vital energy are the raw materials, so to speak, out of which by an initial or creative act, the great first cause originally started the great sequence of living forms which have peopled the planet from then till now, and that still continue the raw materials on which life is dependent for its continuance, and, further, that the principle of life, or vital energy, transmitted from parent to offspring, has continued, and is likely to continue, until either or both become exhausted, to maintain the continuance of living forms which commenced in the lowest order and has continued to the highest.

Living or organised and differentiated protoplasm, with its containing cell wall and contained nucleus, was the first form of animated being, and had its vitality main-

tained by a mode of vital or pre-nervine energy, which accomplished all the purposes of a nervous system by diffusion along certain intra-cellular molecular lines or protoplasmic ways, on the principles of intra-cellulomolecular metabolism. Even here, however, life is a duplex affair, in that it requires for its manifestation a combination of material and dynamic entities, in proportion to and accordance with that determined by the first creative, vital, or organic act and the law of evolution.

When the conditions and environment of uni-cellular existence had been outlived, and when these conditions and environments no longer met the requirements of a multi-cellular organism, then came the first call or need for the provision of an organised nervous system which would hold a cellular community together and innervate it, while maintaining supremacy over the individual cells, to the end that a co-ordinated functional *régime* should subsist between the individual cells for communal purposes, apart from or together with the individual cell work.

The duplex principle here still continues to manifest itself by the combination of individual and communal cell autonomy within the multi-cellular organism. But when this form of organism has in turn "outlived its day and generation," a new departure becomes necessary, and to the system of innervation—sympathetic—which has been thus far sufficient to meet the wants of this merely vegetative innervation, so to speak, there has to be added a further system of innervation to meet the requirements of a voluntarily mobile organism, using muscular agency for enabling it to bring itself into free and full relationship with its environment. Here appears a principle in developmental procedure, which has a most profound effect on the whole current of succeeding organic evolutionary events, introducing a third manner of innervation into the already duplex method. This triple method of innervation is composed of the uni-cellular, or protoplasmic, the multi-cellular, or sympathetic, and the structural, or systemic, the first concerning itself mainly with metabolism, the second with communal organic needs, and the third with intelligence and locomotion.

An organism innervated by all these methods is able to depute the work of its maintenance or metabolism to the first two, reserving for the conjoint work of all the intrinsic work it has to perform in the universe in the "battle of life" for the "survival of the fittest." In that battle, are involved a gradually enlarging faculty for strategy in the warfare, a correspondingly increasing necessity for the use of intellectual means, and therefore an increase in quantity and growing complexity of arrangement of the systemic nervous system, central and peripheral, which has gone on enlarging in extent and improving in character, until it has culminated in man himself, with his brain, cord, and nerves, superadded to and inextricably combined, physically and dynamically, with his sympathetic nervous system, until the latter is quite able, during a third of his life, to take entire charge of the work of his innervation.

On a rough estimate man spends a third of his lifetime in sleep or slumber, and to "all intents and purposes" deposes for that period the supervision and carrying on of the whole work of his body, in the meantime, forsaking it and giving up entirely its voluntary control and the maintenance of its vitality and organic work; during this period he may be said to be "beside himself," and, for the time, it may be said he "is not"; that he *really* "is not," however, we are not warranted in saying, because he is, during that time, liable to dream, and therefore to show that he is still there, although not able, consistently and co-ordinately, to think, to will, or even to innervate his musculature, except somnambulistically.

Sleep may truly be said to switch off the "consciously living" current of life and to relegate the presiding *Ego* to regions absolutely unknown, and so far as we have yet learned unknowable, because without consciousness they cannot be realised, and consciousness during life, apart from material organism or cerebral integrity, is, so far as experience yet goes, unattainable. Regarding consciousness, as now known, as a composite of material and dynamic qualities or entities, and that the dynamic is as evident to the intellect as the material is to the

senses, we are bound to conclude that they are both real factors in its production ; but as the material factor continues at death appreciable by the senses of other living beings, and the dynamic factor discontinues to be so appreciable by the intellect of others, we must conclude, as we believe in the indestructibility of both matter and energy, that they both still exist, and that the laws regulating the incidents of both material and dynamic change continue inexorably to regulate their future condition and process of change for all time. That there is a concrete individual or personal future for the *Ego*, or the dynamic portion of the body, at and after death becomes, therefore, as absolutely proved as that the material shell, in which it has hitherto resided, will continue to assume a "train of changes," which will subsist as long as it continues to exist, and—so far as we know—that will be eternally. Science, therefore, proclaims whether we believe it or not, and whether we wish it or not, that life is eternal, and, that being so, it is surely time that all agencies engaged in promulgating the doctrine of everlasting life should "form" or "come into line," and endeavour with a common will and strength, and with a common purpose, to inspire humanity with an absolute belief in the *inspiring* and glorious doctrine.

Do we not see in the process thus imperfectly outlined the principle of regular advance from the lower to the higher in development and organisation, both material and dynamic, the inspiring, so to speak, of the material with higher and higher dynamic qualities, until the dynamic, outliving or outlasting the possibilities of further material extension or elaboration, the great step forwards and upwards is taken by carrying the dynamic course of progress of disembodied or immaterial personalities into regions altogether metaphysical, as entities altogether ethereal and spiritual?

Such, we are constrained to say, is a *finding of science*, but that it is *the finding of science* on the subject it would be much too presumptuous to assert.

EXTRACT VII.

CONTINUITY AND CONTINUANCE, OR EVERLASTINGNESS. (AS SEEN IN THE ULTIMATE ESSENCES OF HUMAN KNOWLEDGE, I.E. IN MATTER, FORCE OR ENERGY, AND LIFE, AND IN ALL THE PROCESSES AND CONDITIONS THROUGH WHICH THESE HAVE SEVERALLY PASSED, ARE PASSING, AND, IN ALL REASONING FROM ANALOGY, THROUGH WHICH THEY WILL PASS.)

CONTINUITY in the physical universe is everywhere evident, the occasional hiatus to be observed in its various elements, structures, and processes notwithstanding; in fact, that occasional hiatus is but apparent, not real, when the whole is viewed in its natural perspective and sequence, and at a distance sufficient to ensure or to afford *a clear view on a large scale*. Continuity has characterised the history and evolution of that universe, so far as can be realised by the senses and appreciated by the intellect of its best readers and interpreters, and, for the greater part, it is written in such legible characters that "he who runneth may read," so much so, that we hear the same story repeated by such different authorities as the physicist, who has received his information from an examination of the material and forces of nature, the biologist, who has "*tested and tried*" the organic developments around, on, and in the surface of the globe, and the astronomer, who has derived his information from an exploration of the visible heavens. In short, the simple enumeration of the primary elements of the earth's crust, its organic remains and living forms, and the stellar

depths and myriad stars, but prove that in variety there is continuity; the atmosphere, with which the globe is surrounded, ending in, and becoming continuous with the sea on the one hand, with which it commingles and to which it delivers up its life-sustaining oxygen, and on the other the dry land, which in like manner it inter-penetrates and renders productive; the dry land, likewise, allying itself with its aqueous neighbour so intimately, that it takes a temperature of 212 F. to dissolve their union.

Continuity being thus a universal feature of nature's plans and operations so far as we have been able to see and realise throughout the physical universe, we may be prepared, on the extension of our enquiries along the line of *human development*, to find the same—we would say—*law of continuity* used to effect the processes of evolution "all along the line" so to speak. Thus a line of continuity marks and guides the progress of life-forms in their constant advance in complexity of form and ever-recurring and progressing alteration of racial character to fit them for their changing environment until the appearance of man, who, in his own individual organism, evinces the persistency of the same law, and shows a continuity of type in his various phases of embryonic and foetal development which structurally allies him with his neighbours and progenitors. Following this *law of continuity* into the non-physical or immaterial portion or aspect of human nature, we find that certain nervine and mental features are transmitted to him which, by continuity of evolutionary progress, ultimately place him on a platform unapproachable by any other nature than the human, and where his highest destiny begins to be evolved or unfolded, amid environments which necessitate and secure his continued existence, in virtue of this immaterial, indestructible, and consequently immortal part which till death forms an integral portion of his materio-dynamic whole. At death, by the law of continuity, his dual organism splits up into its component parts, the material portion, which has been inter-penetrated and animated by the immaterial, returning by a process of continuous analysis and retrograde changes into its original elements or "dust,"

its *still living*, dynamic, inter-penetrating, and animating part or principle betaking itself along other lines of necessarily non-material development into regions where the organs of sense, did they still exist, could not be functionally affected, but where, from sacred, and thus also from secular, sources of information we are warranted in believing, nay, compelled to believe, that there is an existence for it still to come as continuous and, therefore, unending as any or all of those evolutionary and determining lines which have conducted to the *genesis and ascent* of man, and as pregnant with possibilities and potentialities for further development and evolution as great, and it may be much greater, than were wrapped up in and evolved from the first act of creation.

The immortality of man's immaterial part or, to call it by its usual name, *soul*, is thus claimed by science as an indisputably warranted fact or axiom, deducible from the reading of the book of nature, where it is written as clearly and legibly as any message which has been transmitted through the ages for our information by means of sacred writ or floated down the streams of human story and tradition from father to son and mother to daughter, from Adam and Eve, to the present or last generation of their descendants.

The immortality of the soul of man is, therefore, the final terrestrial differentiation observable in that series of continuous changes constituting his evolution from the matter and energy of this planet, and represents a product only producible by absolutely consummate intelligence to devise and absolutely perfect control over the material and dynamic universe to make. If this be *a*, but not *the*, *true* "finding" of science as we contend it is, then it behoves science and revelation to approach each other, and to "join hands" in mutual recognition of the great and unmistakable fact that, as they are alike pursuing the conquest of the same vast regions of the unknown, and letting in on them the light of truth, they are each bound to accept what the other can give to fit it the better to perform its great work; therefore we beseech both to let "bygones be bygones," and, once for all, agree to merge their forces in a united effort to instil into the mind of

humanity *the truth of its eternal destiny*, and the absolute necessity, consequently, for it to live in the full consciousness and belief that that destiny must inevitably be determined during its brief interval of individual life, and before the dissolution of its mortal and immortal parts has been effected by universal fate or decree.

In continuation, we claim that the universal belief of the psychologically normal and healthy human being in the existence of a hereafter is justified, and absolutely called for, by the continuous "knockings of the human heart on the bars" of the human intellect and reason, in "longing desire for an after life," the patiently sifted and reverently pronounced "findings" of science, the clearly and firmly expressed messages of holy writ, the story of countless secular attempts of unaided, but far-seeing and deep-thinking men, as told by themselves after they have endeavoured to fathom the "riddle of the universe," and especially as these all conspire to prove the same truth, solidity, and reality of the belief in, and hopes from, that *cardinal possession* of every unit of the great human family.

Moreover, in extension of these remarks, we would observe that the *media* or paths along which man has been evolved, being primarily, from the inorganic elements of the earth's crust, by their organised arrangement, union with, and working by vital energy, and thereafter by the opening up of lines beyond these, through the nervous system, which rules and dominates the material organism, by ways of access into the less tangible and ponderable regions of the material universe, as, for instance, along the universal ether, which inter-penetrates all space and substance, including the human body. Along this medium, the ether, the sense of sight has been made to appreciate the existence of material organisms at incalculable distances, and to realise the presence of astral bodies which may have long since ceased to exist in the state they did when their messages were despatched to earth.

This latter statement must be, we think, surely about as inconceivable and incomprehensible by the uneducated intelligence of man as is the great induction of metaphysical science to the educated intelligence, that the immaterial part of man is inevitably destined to progress

along definite lines of evolution "for ever and ever," perfecting in its continual progression its development more and more until it enters the light of that region of ineffable glory, known in revelation as "the perfect day," the light of which, it is allowable to suppose, will illumine to some extent and reveal to finite intelligence the plans and proportions of the infinite intelligence, as well as the working of the all-powerful developmental and evolutionary strength.

Furthermore, we might ask who could say, had he lived contemporarily with the first created living thing and seen the first palæontological remains deposited in the earliest geological stratum, that intelligent, and, as we now dare to contend, immortal man, would in time appear and leave his mark on the latest stratum?

We need not say that it would have been as impossible for that man to answer the question as it is for us, in the twentieth century of the Christian era, in the faintest degree to anticipate what is in store for the immaterial and immortal part of man, on its emancipation from its material impedimenta and its entrance on an unencumbered and immaterial process of development and progress. Imagination here, even in her highest flights, could not essay the task of framing an intelligible answer, but must perforce drop her leaden and ineffectual wings in helpless effort to cleave so rare an atmosphere; where alone, we may assume, the pure and chastened spirit, in the enjoyment of eternal life, can rest from its labours and dwell in ineffable joy and freedom for evermore! Such thoughts have been alike a source of solace and a perennial stimulus to rectitude of conduct in the lives of the great and good of all ages, as well as a potent influence for good on those who, by the strength of their faith in their "sweet reasonableness," the assurance of their intrinsic truth, and the certainty of their ultimate fulfilment and realisation, have been led to live a life of virtue and nobility.

Imagination, however, after all, may have something to say of "light and leading" in justification of her taking up such questions, and of explanation of the position she assumes as the forager and caterer for information for the psychic forces and mental constitution of man, and it is

our bounden duty to listen to, if we do not take advantage of, what she says, inasmuch as she constitutes the advanced guard of the mental forces, the telescope through which the "eye of the mind" surveys the universe, the camera by which are secured negatives and pictures from scenes more remote than the most distant stars, and nearer than the *innermost* soul of man.

Thus it becomes apparent to her view, when suspended by reason in the illimitable region of the unknown—like a spider in mid air, let down by a strand of web into the lower depths, to acquaint himself with the surrounding "situation"—that the prospect for ever deepens and widens as the rope of suspension continues to be given out, until she realises that there is no end to the limit of her vision, and at last, fatigued and worn by her quest, she seeks to return to her mental companions to put before them the results of her experience in the depths of the unexplored and unknown. Of the *media*, in which the evolution and final destiny of man are effected, she has imaged to herself as she has swung, telescoping and microscoping into the most distant regions of space and into the nearest and innermost depths of things, that these consist of the material universe aggregated into "sun, moon, and stars," of the illimitable ether, which fills all space and inter-penetrates all material, and of an intangible, imponderable, but yet *appreciable medium*, which "seems" to inter-penetrates the ether and control the dynamic agencies of the universe. The whole three, being welded and merged in each other telescopically, or in such a way that there is no loss of continuity of texture, no loss of purpose and no irregularity of result, *i.e.* so far as results can be reckoned in an infinitely extended field of operations over an infinitely extended period of time, or, in another word, eternity. Imagination having thus unburdened herself to her mental companions, with reason in the chair, so to speak, on the occasion of their examination and arrangement of her efforts, she is rewarded, in recognition of her efforts, with the honour of a unanimously affirmative "finding," or verdict, on the value of her labours.

It follows, therefore, from this finding and verdict, that

the strikingly realistic account of the Last Judgment given in *Revelation* is not a mere figment or picture of the inspired imagination, but a real occurrence of everyday automatic record; thus the thoughts, words, and deeds of every human being register themselves by impact on the very innermost source of the universe, which, according to this finding, is the spiritual medium with which it is inter-penetrated and surrounded, with absolute exactitude of detail, without the possible omission of a single "jot or tittle," and with the verisimilitude and truth of the most perfect photograph, while leaving at the same time a duplicate copy on the pages of memory so luminous and imperishable that it remains as a means of reference and comparison by the Author of man, and the conscience, with which every human being has been supplied, to be consulted continually, and to be used as a guide, counsellor, and friend, not an enemy,—but if, unhappily, in the latter manner—alas! for that man or woman, "it would have been better for them had they never been born." Alas! also, that the truth, so truly expressed and vouched for by secular authority, in the saying, that "truth makes cowards of us all" is universally applicable, more or less, fully to the experience of every member of the human family.

The truth, also, of the saying, where man is being enjoined to be true to himself, in order that he should "not be false to any man," in the light of such statements, becomes as applicable to the ethical relationships of man, as if they had been expressed under the influence of Divine Inspiration.

Again, it follows from the application of such views to the everyday working of the machinery of civilisation generally, and to the incidence and outcome of those influences flowing from the operations of Divine Providence, we must teach ourselves to understand that working with anthropomorphic tools and using anthropomorphic methods and figures of speech to convey ideas of Divine things, when these fail to convey an intelligible meaning, we must content ourselves with the limited and finite powers in our possession, making use of reason and imagination to their fullest extent to

explore the realms of matter, energy, and space, to the limits of the reachable and attainable, thereafter laying hold of those great sustaining and guiding lines of principle, described in holy writ as faith and hope, to scale still farther heights and fathom still farther deeps of the unknown, until at last it becomes attainable for us to grasp and be sustained by the principle of charity (or love) held out by the hand of Divine affection, in reward for the exercise of continuous and consistent, if sadly defective, effort, until the entrance of that Glorious Region reserved for the "survivals of the fittest" of science, and the "Redeemed" and "Ransomed" of Revelation.

Whether this region is synonymous with the heaven of theology it seems scarcely relevant to the character of these remarks to enquire, but this we feel warranted in saying, that heaven must necessarily have its entrance in this world made visible and recognisable with well-marked lines and features of physical, mental, and moral character determining its discovery, open to the observation of all, capable of discovery by all, and affording a sense of ultimate shelter, security, and enjoyment to all.

Whether, on the other hand, hell is the region so vividly depicted in holy writ, and by many a secular pen and graphic pencil, and the realm to which those who fail in their attainment of what is above described, it would here be futile to attempt, and absolutely impossible to claim as true, but this we feel warranted in saying, that when man, even a good man, tries himself at the "bar of his conscience" he realises that he has wittingly or unwittingly broken innumerable laws, and does penance as the punishment of his guilt in "contrition of soul." But if instead of answering to the description of the average or good man he be a bad man, in the literal sense of the phrase, then, whether he tries himself at the "bar of *his* conscience" or not he feels the punishment of his guilt as "a matter of course," and is made to realise that it is not necessary to wait for a future existence, to feel that the penalties for the breaking of laws, of both the human and divine governments, are not delayed, but that of necessity and inexorably there

begins the work of retribution, and the satisfaction of justice. We might adduce the whole history of the human family as a proof of the truth of this, but does not that lie plainly to be seen in the pages of divine and profane history, in the traditions of the nations and tribes at present existing, and in the individual experience of every living man and woman? From the "origin of evil," in the far distant past, to the *elimination of evil*, in the far distant future, we apprehend that *primitive experiences* must inevitably be the common heritage of the sons of Adam. We claim, however, that the *present* justifies the opinion that the work of elimination advances apace, and that *in time*, and if not, in eternity, it *will be complete*.

EXTRACT VIII.

ON CONTINUITY THROUGHOUT NATURE AND THE COSMOS, OR UNIVERSE.

CONTINUITY, as actually existent throughout nature, so far as we can realise, and throughout the cosmos so far as we can infer, is *the great thread of principle, albeit evolutionary*, on which is, or can be, strung the accepted fragments of knowledge which have been won from their environment by the observation and intelligence of the human race, in its enquiring progress through the ages and the unknown, and the *medium of connection* in which we piece together these fragments, harmonise their bearings, realise their relationships to each other, and succeed to some infinitesimal extent thereby in giving a reason for the order and sequence of "events" and "things" perceived throughout the cosmos, or universe.

Thus the fragments, or units, of knowledge, differentiated from the body of the *absolutely unknown* by the observation and thought of mankind, and called, or known, by the names of eternity, time, space, dimension, energy, gross and chemical matter, ponderable and imponderable, inorganic and organic, animate and inanimate nature, vegetable and animal organisms in particular, lower and higher, automatism and intelligence, mind and spirit, mental and moral attributes, thought and ideation, blind "clinging to fate," or passive resistance and active aspiration towards the ideally perfect and attainable, yea, every fragment of knowledge, by whatever name known, of which we are possessed, can be strung on this thread, viewed apart in its proper proportions and in its cosmic

order, and seen to be a part of *a great whole*, one and indivisible, each and every fragment "showing" or being shown to be *essential*, generally and particularly, in its topographical relationships, and in the totality of its functions and applications, while distinct and differentiable in its individual and local relationships, the one fragment thereby affecting the other, as well as the great mosaic, or whole, which they, together and individually, make up, or form.

Time and eternity so viewed are interchangeable and continuous ; space, dimension, and locality are continuous, energy in varying intensity, it may, or must be, interpenetrates and overspreads the universe, matter, as differentiated from energy in its so-called *imponderable* condition or part, overspreads the whole of space and becomes as ether, matter within matter, or ordinary matter. When observed in the gross or ponderable state of substance, or the material elements known to physics and chemistry, this inorganic matter by virtue of vital energy becomes organic, lives, and has its being for a more or less brief period, when it returns by death or dissolution to its original sources, every atom of matter and unit of energy, the former, it may be, to be re-energised, the latter to perpetuate the potential qualities of living force or being, amongst the qualities of which are those of indestructibility, immortality, and everlastingness, all of which are inevitable, with the certainty of intrinsic necessity secured by the existence of the "*law*" of *eternal and never-ending continuity*, with its unbroken cycles and circles of sequential association of occurrence and evolutionary determination.

These great fragments of our accepted knowledge of the cosmos constitute, in their entirety, the foundation of the further great, though minute, developments of the truth, as now known to and appreciated by the educated human intellect, and so lend themselves to the proper realisation and appreciation of the great strides made by the leaders of thought in their studies of human life and destiny. At that stage of materio-dynamic evolutionary progress reached when organic matter has assumed its high-water level of attainment, viz. at the creation, or

appearance of man, an increasing fineness, so to speak, in that evolutionary process becomes apparent, when the intellectual begins to develop and to superadd the moral qualities—the last and highest of all the human distinguishing attributes, and constituting a great step forward in the ultra-dynamic evolution of the cosmos—and a “new world,” in a sense, has been begun, which is still evolving itself along the *line of continuity*, until of a certainty it becomes apparent that the great common-plane of eternity must be once more reached, and what the human longing, so generally and intensely felt by that race, has pictured to and for itself, the everlasting life has at last been attained.

Thus what we may denominate the all-pervading *law of continuity* opens up to every such creature the prospect of eternal life, with a certitude equivalent to mathematical, and an inexorableness of absolute necessity—time ending as it began in the everlasting continuity of eternity, with its passive attributes of space and matter, and its dynamic factor of force or energy, and all constituting one continuous whole, in the manner of “wheels within wheels,” fashioned and administered by an Infinite Intelligence and Omnipotent Power, which no anthropomorphic methods of estimation and comparison can enable us more than very slightly to appreciate, and which, we may take it, will afford a means of satisfying and employing the purest intelligence and most perfect reasoning powers and inherent “adaptability” of spiritual existences throughout the “endless ages of eternity.”

Continuity, as thus seen, includes in “one whole” every material entity, every dynamic occurrence, and every spiritual existence throughout the cosmos or universe, and occupies space from the dimensions of the point of the mathematician to the utmost attainable limit of astronomical observation and metaphysical speculation, perpetuating itself in never-ending sequence throughout illimitable space and on through infinite time. Continuity, therefore, proves that although the human intelligence can differentiate between these included entities, it cannot realise the separate and distinct existence and working of one or either of them, all being

essential for the existence of the whole, and for the working of its entirety.

Amid the immensity so outlined, all anthropometric methods of realisation of proportions and features become utterly inadequate to cope with the vast problem, the terms day and night, east, west, north, and south, and the like, becoming obsolete, the dawn of day and the "light of setting suns" no longer having a meaning, time itself disappearing, the one great resultant infinitude embracing every variety of thing and every vicissitude of change in its growing perfection and perpetuity, the mind thus dimly and ultimately descrying the goal of "the supremely beatific," whither destiny is leading and guiding it by those "powers of attraction" so long known to and appreciated by all of "light and leading" who have been earnestly treading the onward and upward path of truth and knowledge. In this way we discover that continuity of relationship, harmony of action and interaction, and unity of purpose, become more and more apparent and necessary, as synthetic methods become added to those of analysis, in dovetailing and appreciating the elements of the truth as they become revealed to mankind, and the plan of the universe becomes more exact and definite in outline.

EXTRACT VIII. A.

STRATIFICATION OF KNOWLEDGE.

WE are compelled to believe that cosmogenic or general knowledge has been gradually and slowly evolved and collected from crass ignorance as the human family has spread over the earth and passed through its innumerable vicissitudes and experiences of rise and fall, of advancement and retreat, in the progress or race of civilisation, individual and communal, family, tribal, and national, and that it has had its more or less well-marked periods of production, accumulation, decline, and decay, usually synchronising with these vicissitudes and experiences, and determined by the family, tribal, and national environment: and therefore in the earlier periods of its evolution it was constantly liable to more or less complete obliteration, leaving, it might be, only the slightest and most ephemeral trace or stratum of indestructible residuum or knowledge deposit, in the form of more or less coherent and available fragments, for future higher human necessities and future human guidance.

Thus from the early conditions of the race knowledge was constantly being fitfully and slowly evolved and acquired by limited communities, and with the greatest difficulty diffused throughout their various branches and surroundings, so that constant leakages and entire disappearances of the "raw material," as well as the more or less reasoned collections of knowledge, were of constant occurrence, leaving, after each such occurrence, the same intellectual barrenness and the same necessity for beginning the process of its re-acquirement and re-arrangement

to suit the altered environment and the ever-increasing needs of mankind.

All accessible and available collections of knowledge, ancient and modern, illustrate the truth of these observations to a greater or lesser degree, and point to the existence of common factors in their individual formation and preservation, these factors undergoing, in late and modern times, a continuity and consistency of operation due to improved methods and geographical facilities which were impossible in the earliest periods of human existence and progress. While the factors engaged in the production, preservation, and dissemination of knowledge have been comparatively uniform, certain communities and individuals have been conspicuous in their use of them, and have left contributions to the world's common stock of knowledge which still continue to supply the means of *education* to the present day.

In the list of these contributors of knowledge, data, and methods, we are certainly largely indebted to every great nationality of antiquity, but superlatively so to the authors of Holy Writ, in which we get a *résumé*, or bird's eye view, of the origin of the cosmos, the early history of the earth, the origin and sequence of its flora and fauna, the appearance and evolution of the human race, with its culminating characteristics of intelligence and moral sense, with a belief in a future life and destiny altogether unapproached for combined fulness and brevity, terseness of expression, and trueness to nature so far as yet known.

The definite arrangement of knowledge and its subsequent preservation seem to owe much to the stratigraphic methods adopted by its earliest and later exponents by which the characteristics of symmetrical proportions and regularity of detail gave it the qualities of coherence of texture and easiness of transmission and acquirement by "word of mouth" methods, which were then and long after the sole means of communicating, directly preserving, and transmitting to posterity the stock of knowledge possessed by the leading nationalities and "schools of thought."

Thus the manner of stratification was moulded, so to

speak, on the elements of the time spent, and the work accomplished in the great process of the conversion of "chaos" into cosmic order, and the ordering into being of the flora and fauna of the earth's surface, each knowledge stratum answering to a well-marked period of genetic time and work.

Each of the six days, or periods, of the creative activity was marked by well-defined features, which gave it a distinctiveness at once recognisable and memorable in the stratigraphic deposits of ancient knowledge which enabled the early teacher to reach the intelligence of his pupil with a directness and success which the more diffuse, unstratified, and promiscuous methods of later times have too often failed to do. Moreover, on the completion of the great story of creation and its culmination in the appearance of man as its final outcome, we see the principle of stratification most effectively utilised in the unfolding of man's place in the hierarchy of being and the shaping of his destiny in the present world and "that which is to come."

When man at last appeared at the end of the biological line as the last link in the long biological chain, we see the advent of *perfected animality*, and, as such, we are compelled to look upon him as possessed of qualities of mind and body entitling him to be regarded as altogether happy, innocent, and blessed amid the earliest Edenic life on which the first human pair were called upon to enter.

This pair, we may assume, were altogether *pure*, and therefore *innocent and happy in their pristine condition*, as "to the pure all things are pure," and had not yet been tried by conditions higher than those of perfected animality; but the time was now ripening when a beginning had to be made in laying the foundation of the *great fabric of coming humanity* from which were to be evolved a knowledge of the difference between good and evil, a feeling of accountability for the exercise of this knowledge, and the adoption of laws of justice and righteousness and what constitutes the texture of absolutely perfect human society and mutual human helpfulness.

The earliest creation knowledge strata thus became overlaid with the earliest story of the human race, a story

altogether transcendental in its details, but told with a lucidity of manner and a firmness of grasp of the entire subject, which will command respect and faith till the end of time.

The first stratum of human story is conspicuous from its containing the first example of divine command or moral precept communicated to the human family in their otherwise completely free and untrammelled enjoyment of Edenic bliss in the form of a request, or demand, that out of the entire available fruit production of the Garden of Eden, of which they had been given possession, there were two trees, the fruit of which they must not eat lest punishment, also the first human punishment, should follow.

The command being disobeyed, the punishment surely followed, and with one stroke of divine judgment and justice it was realised that the human race had fallen from the acme of purely biological bliss to which it had attained, and had entered on the thorny path of securing its moral salvation in "fear and trembling," "shaping its course" along lines determined by amenability to moral law, and responsible to divine decree. Thus man, from being the highest form of animated being, with physical endowments complete, now also gifted with intelligence and reasoning powers, entered on the *first stage of moral growth and aspiration* to accomplish the great process of ascension from finished animality to perfect humanity, with its distinguishing characteristics of physical, mental, moral, and spiritual qualities destined to raise coming humanity to the highest attainable position open to created being, and absolutely unattainable by even the most perfect animality.

Thus the first stratum or layer of the higher development or evolution of human destiny consists of the story of man's *fall from animal perfection*, happiness, and bliss, and *his call to cultivate the higher intellectual powers* with which he has become endowed, and to *engraft and rear on these the moral faculties*, which had now begun to waken within him, in order that he should be able to enter on an ultra-animal or immaterial and altogether spiritual existence, in which his nature should be able to live and progress to all eternity. Truly a profoundly

marvellous story, alive with the greatest of human interests and provocative of thought at once overpowering in its retrospective and prospective ranges of application.

Indeed, it may be said that *the fall* left man bereft of his former immediate dependence upon extraneous or non-personal aid in supplying his daily material wants, which henceforth must be obtained "in the sweat of his brow," and thereby was laid the foundation of the future great economic edifice of "trade and commerce," which have now for so long exercised the wits and energies of mankind.

The early attempts of the human species to cultivate the moral character and faculties and to raise that species into the position of moral eminence and supremacy to which its super-animal qualities entitled and qualified it to occupy, turned out, to a great extent, failures, even under the immediate inspiration of divine influences favourable to moral growth, and when the attempts were attended by comparative success, these attempts died out and their inevitable results were almost complete failures and lapses into the still strongly surviving conditions and seductions of animality. In this condition of moral blight and failure were passed the long ante-diluvian ages until the *cup of animality was full and running over*, humanity lying prone, intoxicated, and helpless amid the pestilent influences, absolutely overpowering and benumbing, to which it was exposed continually and from every direction, until a climax was reached, when the whole human family was annihilated together with its animal neighbours, with the exception of a reserved remnant to restart the great problems of post-diluvian human progress and destiny. How could such stories as these, embracing incalculable periods of time and countless human vicissitudes and experiences, be told otherwise than in essence? the essence squeezed, so to speak, into almost homogeneous texture, in which *traces of stratification alone survive* to mark the long separated episodes of the earliest stages of human progress and events, as the long period of human history reaching from Adam to Noah, as alone fully recorded in the book of Genesis, in the tersest yet amplest manner, so abundantly testifies and illustrates.

We are warranted in inferring that the human race in its ante-diluvian proportions was continued in the extent of its spread to more or less limited areas of the most fertile regions of the basins of the Tigris and Euphrates, and that "the flood" embraced those areas and devastated their whole extent, collateral evidence of which has been recently shed on the subject by archæological research into the literary remains of local nationalities of a kindred origin to the authors of "Holy Writ."

This being so, we are further warranted in inferring that the human race, if it had extended outside of these areas, may not have likewise perished, inasmuch as local tradition and archæological remains do not refer to any such general or local occurrence as that described by the author or authors of Genesis.

Be that as it may, however, the occurrence of the flood marked a new departure in the history of the human race, in which appeared the evidence that *family cleavage* initiated the process of tribal formations and national accretions of population, which became the foundations of modern society and nationalities.

While the post-diluvian human family broke up into family groups, tribes, and nationalities, with ethnic affinities more or less strongly marked, and operating as a bond of union between them, it is evident that the centrifugal and disintegrative forces grew as the centripetal ceased from distance and geographical remoteness to exercise their wonted cohesive power and influence. Thus there developed different types of human character as time and environment shaped the course of evolution of the various branches into which the race was being divided and subdivided.

These types were dependent for their production on the nature of the occupation engaged in, together with the geographical character of the country inhabited, thus the tilling of the soil or agriculture evolved a certain type; while hunting and the chase evolved another, and when both conditions were operative as factors in national character formation, an element of stability and strength was afforded which told favourably on the nationality concerned, and gave it the opportunity of being prolonged

into what are regarded as early historic and even modern times.

The period of time embraced in this process must necessarily be uncertain, but necessarily prolonged, and the stratification embraced in the process of its deposition must therefore cover a large area of post-diluvian and prehistoric knowledge stretching down to the historic period.

Its progress embraced and was responsible for the growth of prehistoric civilisation and the foundation of human law and jurisprudence, but its great opportunity and divinely enjoined privilege was the foundation and evolution of a higher moral standard of excellence than had yet been displayed by humanity; and the development of individual and communal moral character for its sake as well as for its influence on moral progress generally.

The long process of pre-human psychogenesis attained absolutely perfect and completely rounded proportions in man, to whom the endowment of a moral nature was in addition given, by the cultivation of which he could qualify himself to enter on a higher phase of being, and to attain to a position in relation to the future altogether impossible to the highest animal life.

During ante-diluvian times, when the relationship of the human family to the Author of its being was seemingly closer than in post-diluvian times, its apparent lukewarmness in the matter of the cultivation of its higher powers can only be regarded as due to clinging to or survival of old animal habits and natural dispositions, the throwing off of which still continues the great moral task, individual and communal, of the twentieth century of the Christian era.

There are not wanting, however, references to the growth of the spiritual qualities, such as that Enoch walked with God, in even ante-diluvian times, and that Noah had so commended himself to the respect of the Most High that a renewed opportunity was given to the human race to begin the moral tasks which had proved too great for his predecessors.

These tasks, during post-diluvian times, continued to be much hindered in their performance by the "clinging of the Old Adam" to his descendants, and in consequence

a very chequered existence was led by the highest types of moral growth and culture, insomuch as direct and drastic punishment were frequently meted out to "erring humanity." Nevertheless, during this long post-diluvian and very slightly historical period there were elaborated cults and systems of religions which served to keep the minds of men informed of and in touch with "the higher things" belonging to human life and destiny, and above all these cults and religious systems there ultimately arose the great forward impulse and influence of the Jewish religion, which gave a coherence and life to the principles of the moral life and practice which continues to be felt to the present.

Contemporarily, no doubt, there have been in operation throughout the various branches of the human race great agencies and influences, each dependent for its success on its adaptability to the requirements of its immediate and more remote relationships and its powers to meet human higher needs and the general moral advancement of the highest human interests. Needless to say that the evolution of religious cults and systems has received its highest pitch of attainment and its living and every-day application to the ethical and moral requirements of the human family, individual and communal; with a fulness and sublimity far outreaching local and temporary conditions, and stretching forward to the times when the human race will at last be made "perfect."

All this is consistent with the system of knowledge stratification adopted in the opening chapters of Holy Writ, and, so far as we are able to anticipate, in accordance with the immediate and remote "signs of the times" and the requirements of the truth.

A remarkable parallelism characterises the incidence and development of moral faculty and religious disposition and practice on the part of the individual and the community, thus the moral faculties are the latest in development and the most uncertain in duration and result of all psychological endowments of man in his individual capacity, while in the community the same rule holds good, with perhaps an even greater tendency to non-development or lapse into failure.

It is remarkable also that religious systems have arisen from the individual efforts of men of "light and leading," who, by strength of moral character and will power, have exercised an influence for good on their human environment to the extent that a form of religion has taken shape that has become a more or less permanent institution for the advancement of civilisation, with all that is implied in the term and that flows from it.

Thus in ante-diluvian times the family of the first pair instituted the recognition of their dependence on God by the adoption of the institution of the offering of sacrifice with a more or less definite understanding of its meaning. This mode of religious observance was renewed in post-diluvian times, and continues to some extent to the present day to exercise the religious instincts of the human race in some parts of the world.

Higher modes of religious practice have, however, gradually displaced this early method, and its complete substitution by moral, and self-, sacrifice has now been effected amongst all the more civilised communities and nationalities as well as individuals, many of whom live as well as profess the tenets of a fully evolved religious system with a definite "creed" and a more or less elaborate "form of worship."

EXTRACT IX.

ON WHAT IS, HAS BEEN, AND WILL BE—AND “BUT IT
DOETH NOT YET APPEAR WHAT WE SHALL BE.”

THE scientific bearings of the great subject embraced in the above title must be drawn or taken from whatever sources they can be obtained, and the conclusions as to the course of the ship of truth, so far as the subject is concerned, must be based, if they are to be reliable, upon the widest inductions from the universe of nature, revelation as it has been vouchsafed to us by Holy Writ, history, and tradition, besides what of “light and leading” is obtainable from, or supplied by, our inner consciousness.

There is a consensus of opinion, backed by authority and support from all these sources, that the *present* “state of things” is a reflex and continuation of the *past* “state of things,” with a general belief that that state of things known as what *is*, is an advance, however infinitesimal in degree of perfection, on what *has been*; moreover, what has been, when regarded from the same points of view, so far as we can accommodate ourselves to them, shows a continuous improvement, from the utmost limit of possible comparisons, on the most primitive or foundation “state of things,” or that of chaos, when the work of creation, so far as this earth and planetary system are concerned, began, and when time also began to run.

What is and *what has been*, therefore, constitute an unbroken or continuous sequence of events, which displays a constant onward progress of developmental

achievement and improvement in the "state of things," and which, in virtue of the sustained and ever-recurring increments in adaptation of means to ends and working efficiency, must inevitably lead on to degrees of perfection in the future state of things as well, which must eventuate in or lead to infinite advantages and advancement all round for that period embraced in *what will be*, in comparison with which, by an effort of the scientific imagination, we feel ourselves compelled to estimate the *is* and has been as only a beginning and an earnest. If this be true, regarding the first three questions—what *is*, has been, and will be?—and we fail to realise that it can be otherwise than we have ventured to state—what answer can be given that can in any degree meet the last question, "but it doth not yet appear what we shall be?" or in the faintest degree express the profundity of meaning embraced in its absolute transcendentalism of nature, the extent of its thought provocativeness, and the faith-inspiring power in the existence of the unseen and eternal verities which lie hid, but which we are constrained to admit realisable, within its cryptic folds and ample proportions? Verily, there can be no answer given, even from the highest levels reached by the combined forces of knowledge in their most daring efforts to reach the goal of the farthest knowable; we must, therefore, having done our best to satisfy ourselves that there can, as yet, be no answer given which will convey an appreciable meaning, resign ourselves in faith, that it will at last be answered in "the fulness of time," and where the fulness and completion of the entire circle of events embraced in the title of our thesis have been evolved.

Who, as we have elsewhere said, of the most far-seeing moderns, could have foretold, had he lived contemporarily with the first created living thing, and had seen its remains deposited in a geological stratum which has now become palæontological, that intelligent and, as we now dare to contend, immortal man would in time appear and leave his mark on the latest stratum?

EXTRACT X.

ON BIOGENESIS IN ITS WIDEST ASPECT, AND IN PARTICULAR ON ITS APPLICATION TO MAN.

BIOGENESIS, in its widest aspect, relates to and includes the past or prehuman transcendental process of the origin, continuance, and transmission or evolution of life generally, and therefore lies without or stretches beyond the region of the immediately demonstrable, and consequently it may, or must, at once be accepted in scientific faith as a necessary truth, and as affording a bed-rock of solid, though unrevealed, knowledge on which to erect the whole structure of present and future biological science.

The origin of life or its creation, when the condition of the globe became suitable for its advent, must necessarily be accepted as the central fact in the great chain of cosmic purposive causation and effect, and as marking the definite area where the inorganic and organic worlds of matter meet, commingle, and separate, each to perform their related but divergent *rôles* in the evolution of the cosmic vitalities and inorganic entities.

Whatever form characterised the first of living organisms it is now impossible for science exactly to say, we, therefore, tentatively content ourselves by assuming that it was of the lowest order, a statement which both Revelation and science mutually warrant, and that, as the conditions of environment have altered, and transmitted characteristics have accumulated and undergone change and modification, corresponding alterations have necessarily taken place in the specific and generic characters of existent life forms, by which a process of continuity, increasing complexity,

and adaptation has prevailed, and at last revealed man, with attributes fitting him, to some extent, voluntarily to adapt himself to his own altering surroundings and aspirations, and so, it may be, to fit him to aid in the evolutionary work of the cosmos throughout the future ages.

Biogenesis, however primarily initiated, whether by unal or multiple creation or creative acts, has been at work since the commencement of that process in perpetuating and securing the continuance of life, and each biogenic act has marked a rising in complexity of organisation, and has consisted essentially of the repeated and repeated innervation of a passively living mass of specially prepared, alternately fixed and free, protoplasm, by a dynamically active body of also specially prepared but mobile protoplasm, each of the two being usually contributed by different organic or parental factors in response to specific initial influences and conditions for the consummation of the one communal biogenic object; in other words, ovulation and fecundation characterise every such biogenic occurrence, the great exception to this prevailing rule being effected by gemmation, segmentation, or kariokinesis, in which cases the whole biogenic phenomena are unal, or confined to the one organism, and repeated in continuity so long as the environment and conditions of such life are maintained.

We, moreover, take it, notwithstanding what has been urged to the contrary, that life constantly proceeds from, or is preceded by, life, the only exception to this, so far as reasoned assumption and observation enable us to form a definite opinion on such a transcendental problem, being the act or acts of creation referred to, the materio-dynamic necessity for which it is impossible to gainsay, even though we admit the subsequent, or after, universality of the operation of the law of evolution in the determination and sequence of natural inorganic events, and the organic procession of life forms.

The main developmental events, in the more usual biogenic and elementary forms of procedure and sequence, as already observed, are the direct, dual or parental, contributions of a specially prepared protoplasm to the organic formation and evolution of a uni-cellular organism, the dynamic endowment of the resultant or

united protoplasmic mass with vital energy, the re-arrangement of its molecular elements, in virtue of that endowment, into living and developing structures with functional attributes conformable to the living necessities, in whole and in part, of such an organism, and the concurrent preparation, for its subsequent perpetuation, of a potentially endowed and organised residual biogenic plasm, which will, in turn, contribute to or ensure a further biogenic combination and sequence, to be repeated *ad infinitum*, or until the resultant multi-cellular organism requires the division of its texture into specially endowed cell groups, or nascent organs.

In the process of multi-cellular increase, and the differentiation of the uni-cellular organism, the unity, material and dynamic, of that organism is secured and maintained by the collateral uniting or inter-cell processes, left by kariokinesis during and after cell division and detachment, these processes constituting the foundation of the sympathetic nervous system, which ultimately unites into one multi-cell community every division and subdivision of the original uni-cellular organism, and, therefore, operates and administrates that cell community on the lines foreshadowed in the molecularly determined innervation of that, the uni-cellular organism. All vegetable, and the greater part of the lower animal, forms, are so innervated and vitally operated, the vital energy, or life, being transmitted and maintained by somatic, material, and dynamic agencies, entirely under the control of a central or original, and the derived sympathetic nervature, molecular, stranded, or fibrillar, with, in the most advanced forms, the provision of ganglionic centres, for specific structural purposes and local functional contingencies.

The biogenic phenomena, here described, constitute exactly those observable in the first stages of human biogenetic development, as well as those observable in the first stages of development of all systemically innervated animals, and are alone absolutely sufficient to meet the organic requirements, material and dynamic, of the vegetable kingdom, and the larger half of the animal kingdom—the other half of the animal kingdom calling

for the genesis of a systemic nervous system, or nervature, to meet the requirements of a voluntarily determined innervation, with its added striped musculature and attached skeletal structures, protective, prehensile, and progressive.

This last biogenic nervine phenomenon may be regarded as the crowning act and finished product, and, so far as biogenesis has allied itself with, or consists of, the matter and energy of the cosmos in the evolution of the flora and fauna of the globe, it is the scientific *raison d'être* of all preceding biogenesis; it may, moreover, be regarded as the conclusion, or summing up, so to speak, of all biogenic problems, and the final evolutionary product of the entire cosmic organic work, material and dynamic, through which our planet has passed since it was "launched into space."

The systemic nervous system, with all that belongs to it of material and immaterial, of ponderable and imponderable, is the high-water mark of biogenesis, and, even in its most rudimentary and elementary form, constitutes the most profound departure from the earlier species of innervation and biogenic procedure in the whole history of organic life. Furthermore, we are warranted in looking upon it as the culmination of all the biogenic activities of the whole æons and ages of the entire organic events and plan of creation, and the introduction of the most profound and inscrutable problem of man's higher, immaterial, and immortal, destiny.

The biogenic origin of the systemic nervature in all its parts thus becomes the greatest of all the functional work of the sympathetic nervous system, and the highest type of evolutionary product yet known to science. So distinct and unique as an organic structure is the systemic nervous system that we may look upon it as a separate organic entity or living being evolved from, surrounded by, and conjoined with the sympathetic nervature, each of the nervatures having at the same time an independent, or particular, and a communal functional *rôle*, and, to some extent, a separate histological and physiological existence, with an intimate anatomical relationship. So much so is

this last series of relationships secured and safeguarded that the systemic nervature, as it becomes developed, absolutely dovetails itself into and with its non-neurosystemically related neighbouring structures, that it affects and is affected by them through a more or less delicate, thin veil of specially prepared and interjected fluid or lymph, so as to be passable by the most delicate nerve impulse, but not, or sparingly so, by other modes of energy.

Thus the systemic nervous system in all its parts is separated from its material surroundings and functionally related, sympathetically innervated, textures so absolutely that, for independent functional purposes, it literally becomes "the inner man," or, more strictly, the *abode* of "the inner man," and holds sway over the whole consciousness and contingent destinies of that inner individuality which is guided by the light of reason or is led astray by unconsidered impulse or passive obedience to the lower instincts and survivals of neuro-sympathetic agency and domination.

The material biogenesis of man may, therefore, be regarded as threefold, viz. uni-cellular, multi-cellular, and neuro-systemic, each stage of which is characterised by the biogenic influence of a distinct form of innervation, in virtue of which the original life impulse is passed on from stage to stage of the individual existence, and finally yielded up or shed in dynamic continuity and indestructibility, by its dissolving material matrix and "erstwhile dwelling-place."

The systemic nervous system, when all has been prepared for its introduction into or evolution from the sympathetically innervated textures by a further biogenetic process, becomes the kernel or habitat for "the eternally living principle" of man, to become surrounded by textural enfoldings and outworks of organised materials so complete as to afford as untrammelled an opportunity for complete evolution as a material matrix of the most highly organised order known in this world can allow. It is, therefore, not to be wondered at if this matrix of transcendently organised nervine tissue is surrounded by accessory structures and fluid environments of an

order unknown, or at any rate unsurpassed in design, throughout the entire anatomical domain of "adaptation of means to ends," or in the whole physiological array of specialised structure and function displayed within the human body.

Man, "to all intents and purposes," thus becomes a persistent, living, dynamic entity, whose biogenesis is effected by a threefold series of materio-dynamic changes, beginning with his duo-uni-cellular detachment from his parental sources, and terminating with his dynamic release from material incorporation by dissolution of his biogenetic bonds and corporeal entanglements, and, therefore, whether he wills, wishes, or believes it or not, his *continued existence is absolutely certain*, and he may rely upon it with the utmost scientific warranty and confidence as a clearly demonstrated and undeniable materio-dynamic problem and biogenetic truth.

Concluding that this generalisation is scientifically tenable, we at once perceive that the most important structure in the human body is, therefore, necessarily, the systemic nervous system, and recognise that all the organised and structurally related material parts outside that system are but the scaffolding and buttressing erected by a specific process of biogenic activity to contain it, and afford it a means whereby its "indwelling" spirit, soul, or conscious and reasoning essence can affect, and be affected by, its environment, and so have its destiny determined and secured, and its passage from the past to the present, and from the present to the future, evolved in perfect and continuous sequence; the materio-dynamic or temporary merging in, and continuing as, the purely dynamic or eternal, by the influence and through the reign of undeviating, ever existent, and controlling law.

Materialism and spiritualism, so called, thus arrive at the same conclusion as to man's immortality and eternal destiny, and it will surely be unworthy of either, or both, therefore, should they persist in standing aloof from each other, and in endeavouring, single-handed, to perform their duties to the human race, in ignorance of the great services they are capable of mutually rendering each other,

and of the increased power for good which such a recognition may, and would, effect.

In thus a little further analysing the steps or stages of human biogenesis, we become aware, first, of the great fundamental truth that the individual life is transmitted by direct descent from two pre-existent or parental organisms, a material basis for its evolution being at the same time provided, whereby the process of biogenetic development is secured and finally perfected, and last, that the materio-dynamic compact, which has so long, or for a *full* lifetime, existed in the individual being, is undone, when the conditions for further collaboration between the material and dynamic partners thereto no longer yield a profitable return, so to speak, on the invested common capital, and when, therefore, it has become necessary for each partner to claim its own and to re-invest or continue business under altered conditions. Here death steps in and dissolves the partnership, leaving each to become amenable to the re-arranging power and administrative influence of cosmic law and order and "the eternal fitness of things," the material partner, with its organic wealth, returning to the great common storehouse of inorganic nature, while the now untrammelled dynamic partner, with unimpaired energy and the accumulated immaterial capital of a lifetime, is left free to continue the life of eternal evolution, an instrument *beyond time* in the service of Supreme Intelligence for effecting the discharge of congenial duty and meeting necessary obligation in the regions of that transcendentalism, the faith in which, however imperfect, has ever been held and expressed, more or less clearly, and more or less strongly, by the leaders of the human race.

The duplicate volumes of nature and revelation thus *lying side by side*, from this point of view are found to speak the same language, illustrate the same truths, and become mutually explanatory and helpful. We therefore bespeak for the work of their joint teaching that tolerance and catholicity, and that depth of charity for mutual difference of opinion that the supreme importance of the situation demands from their respective devotees, in the fervent hope and strong confidence that only good can

result therefrom. Moreover, we are convinced that *but one volume* must ultimately suffice to contain the clarified body of absolute truth, from whatever source it may have emanated, natural or supernatural, and whatever it may have concerned, material or dynamic, human or divine, temporal or eternal.

EXTRACT XI.

ON INSTINCT AND REASON, AS RESPECTIVELY EMANATING FROM, AND DOMINATED AND DETERMINED BY, THE SYMPATHETIC AND SYSTEMIC NERVOUS SYSTEMS.

THIS transcendental psychological subject has exercised the human intellect since the dawn of mental philosophy, and is likely apparently to continue a subject for metaphysical enquiry and calisthenics till "the end of time," or until its solution becomes a scientific possibility. Meantime, then, we would venture to indulge shortly in the exhilarating exercise by adding a few thoughts to the already large accumulation left by our mental philosophical predecessors and other thinkers and writers more amateurly interested in the subject.

Instinct and reason are alike the functional result of the action of nervine agency, or energy, on organised matter, but through differing channels, or by different nervous systems or structures, on differently responsive organisms; the former, instinct, may be regarded as simple and automatic, the latter, reason, as compound and auto-determinant in nature and character. These resemblances and differences must, therefore, be due to the existence in their respective spheres of a principle of differentiation in structure or innervation or both, in virtue of which their specific nervine products become divisible into the two categories. This principle of differentiation seems to us naturally to flow out of, and be dependent upon, the existence of two separate, but inter-dependent, nervous systems; in the higher ranges of animal life each, to some

extent, influencing the other in the region of compound and auto-determinant cerebration and neuro-muscular function, while acting as one in the lower, where neuro-muscular function is simple and automatic, and required merely for organic purposes.

The latter, or simple and automatically acting nervous system, is synonymous with the sympathetic, and is, alone or by itself, capable of meeting the entire requirements of the earliest innervated organisms by producing and distributing the necessary vital or nerve energy on which their individual life and the perpetuation of their species depend. Combined with, or added to this simple and automatically acting nervous system, the sympathetic, at the time when the conditions of animal life have become more complex, is the systemic nervous system which, while not abrogating or abolishing the functions of the former, or sympathetic, incorporates it, so to speak, with itself, the two blending and merging into a dual nervous system, which henceforth works on joint principles in reciprocal, varying, or changing proportions, according to the position occupied by the individual animal in the scale of being.

The neuro-genetic structural or evolutionary developmental procedure implied herein seems to us to be the organic basis on which is built up, or from which are evolved, the dual nervine and neuro-mental attributes of instinct and reason, each being dependent on the existence of an individual nervous system, and both being combined, in the higher animal orders, in the dual direction and control of many unally impossible nervine phenomena.

In the uni-cellular or lowest orders of animal life, as well as vegetable life, the vitalised protoplasm composing their organic textures, by the operation of the natural forces surrounding and inter-penetrating them, responds spontaneously and performs unaided the various functions of these orders without being possessed of a nervous system proper. In the animal orders immediately succeeding and rising above and from these, however, the necessity for the possession of a structural arrangement for the molecular and cellular constituents, whereby energy can be produced, captured, or stored, and distributed by them for vital purposes, becomes so urgent that the

provision is made or evolved of a rudimentary nervous system which, in addition to taking advantage of the inherent vital facilities provided in the earliest or uni-cellular forms, affords a means of localising and circulating vital energy, which in turn enlarges and intensifies the range of vital action, and increases or widens the field of functional activity. Such a rudimentary nervous system responds spontaneously and automatically to stimuli, natural and nervine, with undeviating precision, a circumstance which lays the foundation of that exactitude which characterises all instinctive action, and that apparently far-seeing ability with which the lowest orders of sympathetically innervated organisms are credited.

Rising, by natural or sequential stages, higher in the scale of animal life, we continually observe, as we ascend, that this nervous system, the sympathetic, becomes more differentiated from the merely vitalised or living protoplasm which constitutes the individual cell, and while retaining under its charge, as an elementary part of itself, each and every such cell, it, in virtue of the increase in cell-production, owing to kariokinetic agency, continues its connection with each cell; as it is added to the community of already existent cells, and as these cells and communities of cells become arranged into an organic whole, or into separate structures, it ultimately establishes itself as the vital agency in the administration of the cellular commonwealth, animated being, or animal organism, and conducts its affairs with the utmost precision and certainty. When this primary and sympathetic nervous system becomes no longer capable of coping with the vital conditions of increasing extent and complexity, an additional nervine agency is evolved, or called to its aid, of a higher order, which enables it completely to cope with the increasingly complicated condition of its immediate and more remote environment, and which, in conjunction with itself, enables it to meet and overcome all the difficulties due to its organic limitations as the cellular life nervous system, and which opens the way along which the long evolutionary process culminates in the production of intelligent and reasoning man.

This second nervous system is evolved from and produced by the first or sympathetic, or, as we have just termed it, the cellular life nervous system, and it may in turn be called, besides the systemic, the higher animal or ultra-cellular nervous system—a nervous system which enables its possessors, by virtue of sense organs and ultimately reason, to appreciate their distant as well as immediate environment, and to more or less intelligently adapt themselves to the requirements of the positions in which they may be placed. At first, or in its earliest stages of evolution or developmental unfolding, it (the ultra-cellular) is to a great extent subordinated to the requirements of the cellular nervous system, and, consequently, acts with the almost automatic regularity and exactitude of that system, responding to the ordinary stimuli of external nature, and evincing the faintest beginnings of independent and determinable, or purely systemic nervine activity; hence, any indication of this latter is almost purely instinctive in its character, and limited in extent to the most elementary systemic nervine requirements in the fixed or immobile structural conditions characterising the first examples of the compoundly or dually innervated organism.

Ascending still higher in the scale, we perceive that systemic nervine conditions gradually increase in complexity as the character of the animal form rises in point of organisation, freedom of movement, and independence of existence, and as the real “battle of life” and the “survival of the fittest” come in to direct the formative and developmental processes along the lines of continual improvement and upward progress. The movements evinced by the animal life of this period are necessarily dominated and coloured by the sympathetic nervous system, and therefore limited almost entirely to nervine influence, or the instinctive and non-self-determinant in nature and extent.

Following up the stream of animal life, we continually enter on new phases of advancement in type of individual organisms as the conditions of life rise in difficulty and complexity, and therefore necessitate the addition of more highly organised and finely working neuro-muscular

machinery, organs, and viscera for the performance of particular and specific functions, and for nervine centralisation and reflex innervation, until entering the region of the vertebrates we discover that the principle of centralisation has reached proportions in which a great nervine emporium, exchange, or brain, has been evolved from the upper or anterior nerve ganglia of their more elementarily developed progenitors, and means arranged by which the movements of their bodies can be effected on determinant lines, or by the aid of reason. Necessarily, in its earliest stages of evolution, reason is much overlaid and affected by instinct, and hence its infant efforts are often so rudimentary and meaningless as to betoken the still prevalent subjugation by its ally and ancient master, instinct; the movements and activities evinced by the organisms of the early vertebrate animals are therefore largely dominated and determined by instinct, which is yet powerful, and very little by reason, which is feeble, and has not yet obtained the position of ascendancy which it ultimately is allowed to obtain in determining the actions and shaping the destinies of its possessors. Here, necessarily, where the growth of reason is yet rudimentary, instinct is more trusted and obeyed than it, with the result that evolutionary progress is made more automatically secure and exact, and the way thereby prepared for the advent of reason, with the prospect of its ultimate ascension to the vacant throne in the mental hierarchy of man himself.

At that stage of neural evolution and mental development which we have now reached, where man appears on the scene, we have attained a point in our enquiry into the nature of the processes involved in the production and existence of instinct and reason respectively, which will, we hope, enable us more fully to realise their true nature and the causes of the similarities and differences which characterise them, as well as some of the potentialities and limitations belonging to them, as the great guiding influences at work in determining and shaping the destinies of the various species and genera possessing them.

In the above short summary we have seen, but

necessarily very dimly, that in the early stages of neural evolution or neuro-genesis, where the sympathetic or pan-cellular nervous system is conterminous and identical with the cell and its nervine influence, and constitutes the life of the uni-cellular organism, that kariokinesis and consequent cell proliferation and increase constitute the starting-point of the neuro-genetic process, inasmuch as every cell unit is connected with another cell unit by continuity or by a cell process, so that such processes, remaining constituent parts of the growing cellular community, must be regarded as indivisible from, and intrinsically identical and conterminous with, that cellular community or organic structure, and, therefore, that every such structure is synonymous with the sympathetic nervous system, and altogether a neural structure; hence it may be said that the sympathetic or cellular nervous system nourishes itself by imbibition from without, and conveys pabulum as well as energy through its so-called inter-cellular fibres or processes, which processes must, therefore, be porous enough to permit capillary transmission of that pabulum, and so must be reckoned as circulatory *media* in the double capacity of conveying both material and energy from cell to cell by cell contiguity, or unbroken histological continuity and insulated dynamic disposal or conduction; all which constitutes the ordinary functional rôle of the sympathetic or cellular nervous system, through the guidance of automatism and instinct. Further, we have observed, when the growing needs of increasing and more complex organic relationships required the provision of a supplementary and improved nervature to aid the existing sympathetic or cellular nervature adequately to perform its functions, that an incipient systemic nervature showed signs of development within and from the hitherto sufficient sympathetic nervature, and that thereafter the innervation of the gradually rising and increasingly complex forms of animal life have continued to be innervated by the dual co-ordinate and reciprocal nervatures, and that in the latest and highest forms of animal life the nervine administration of the vast machinery engaged in systemic nerve work alone, and in its reciprocal relationships with the sympathetic, has been delegated to and

centralised in that enormously developed and complex structure, the brain, cord, and subsidiary nerve centres.

In this dual nervine *régime* it becomes more and more observable that a subtle and beneficent plan runs through the evolutionary process involved in the genesis and development of the structures concerned, whereby the maintenance of life is secured, and the purposes of that life made attainable; thus, the maintenance of life is secured by the existence of an automatically acting and systemically independent nervature, by which the lapse of vital function is obviated and the continuity of the vital processes or life maintained, while the conscious or voluntary and higher needs of life are met and secured by a systemic nervature absolutely adapted for the purpose, and capable besides of reaching towards and enabling its possessors to realise the existence of a universe external to itself and extending into infinity.

EXTRACT XII.

LIKE PRODUCES LIKE IS A DOCTRINE UNIVERSALLY TRUE THROUGHOUT THE WORLD OF ORGANIC NATURE.

THE truth of this doctrine is now acknowledged by physicist pure and simple, chemist, physiologist, and pathologist alike, *i.e.* throughout the domain of matter and energy as known to *these scientists*—matter in its inorganic and organic varieties, and “*organic energy*,” by whatever name denominated, being subject to its all-pervading influence.

The inorganic matter composing the crust of the earth, on passing through its long series of changes, as recorded in the archives of its strata, has comported itself with the utmost constancy to the requirements of its evolutionary operation, and has, through the long æons of time that have passed since its departure from “chaos,” made gradual progress along the stages of like producing like, with one step farther, better, and higher, until now a retrospect of unbroken continuity of likeness and advancement of production is traceable, of the greatest precision and consistency, throughout its whole extent. No new elements have been evolved, no unfamiliar methods of procedure have been adopted, and no departure from the primitive manner of evolution has been introduced to disturb the sequence of materio-dynamic events.

Of organic matter the same may be affirmed, and with equal truth, although here, from the first establishment of the lowest living form or organic unit until the final evolution of the “human form divine,” a more multi-

tudinous array of change and variety is observed, but absolutely consistent with the most complete conformity to the truth of the doctrine, and showing a rate of progress and an increase in complexity of organic detail and advancement in the character of vital activity and purpose from its origin to its present condition.

That organic matter has been and is won by vital or organic force from inorganic matter is a truth supported by everyday observation and experience, and that like vital processes on like inorganic materials produce like organic results is also shown by everyday observation and experiment, and, besides, that a continuity of life-forms have been at work in modifying the inorganic material of the surface of the globe can be read in legible characters there is also true, and leads on to the recognition of the converse truth, *that like and dislike cannot reproduce each other*, a statement which *at this juncture must be advanced as a truth*, and, therefore, that organic matter was at first initiated by a departure from the operation of this law and the substitution of a withdrawal or departure from its universal prevalence. This substitution constitutes *a new creation*, an act which enables inorganic to be converted into organic matter, and to minister to the sustenance of living forms, or, in other words, an act by which the Creator and Originator of life made it possible for organic forms to live and grow on the inorganic elements of matter. This creative act over, the dominant influence of the law that like produces like again became operative in the moulding and evolving of the long chain of living forms which has intervened between that creative act and the flora and fauna which now cover the surface of the earth.

Creation thus must be regarded as *a great truth in scientifically reading* the story of matter as it surrounds us, and in appreciating the relationships of the two great organic kingdoms in all their length and breadth in the past history of the globe and its present condition. Creation itself signifies the measured and consistent influence of evolutionary energy or force in the earliest inorganic state of matter, and its preparation for the advent of organic use and the achievement of great

organic ends, as well as in the actual initiation and introduction of the primeval living form, the nursing of its infant existence, and the spread of its progeny throughout the organic world.

Creation, as it is portrayed in Holy Writ, is nothing else than marvellous in the closeness of its details to the sequence of the evolutionary steps that constitute its so-called profane or lay scientific history in the unstrained truth of its thrilling story, in the terseness of its phraseology, in its great fulness of meaning and unfathomable profundity of teaching; besides, it verily constitutes the highest teaching of the highest level of present-day science, which indeed seems to be but a re-telling of its story in a *belated* manner, though with perhaps greater fulness yet diminished effulgence.

EXTRACT XIII.

ON THE EXPRESSIONS—"THE MIND'S EYE," "IMMORTALITY," AND "THE PURSUIT OF THE TRUTH."

THE origin of the expression "the mind's eye" is very obscure, but its true meaning has been appreciated and its use had recourse to by every section of educated people when speaking of things pertaining to what we may designate the inner consciousness, or of things appreciated by the mind alone, unassisted by the use of the senses, and amenable alone to the processes of reasoning in their pure and peculiar psychological forms.

The physiological and material bearings of the subject have here to some extent ceased to enter into the practical evolution of the phenomena of mind, or apart from their necessary existence and potential bearing as a sleeping partner in the materio-dynamic, or physiologico-psychological firm, so to speak.

This sleeping or physiological partner, to continue the metaphor, contributes to the assets of the firm the whole material and rolling stock in use, with their motive powers, or dynamic supplies generated and regulated by uni-cellular or molecular innervation, sympathetic innervation and control, and systemic innervation, all of which are inhibited from but capable of immediate switching on and periodically sustained use, by the mentally endowed cells or purely psychic neurons. The physiological material and power, with their histological ways and means, open and viable by psychological impulse, the whole universe lies open to the view of "the mind's eye," and but requires the aid of reason, with the assistance

of the other great faculties of the mind, to scale heights and fathom depths only reachable by and visible to that "organ."

The mind's eye constitutes the very centre and essence, so to speak, of the consciousness or innermost core and the imponderable or immaterial part of man, where his whole life's experience, derived from material and immaterial sources, is stored up, focussed, and made available for the mental and moral working of the human machine, and for its pilotage through the scenes of earth to the regions only appreciable by the mind's eye, by the agency of faith—faith begotten of belief in "things seen and temporal," or appreciable by the senses and strengthened by the exercise of reason on the consideration of those "not seen and eternal."

The material whereabouts or *locale* of the mind, we have elsewhere contended, is to be found amid the nucleoli of the purely mental cells, or neurons, in that region of the cerebrum which we may designate the *sensorium proper*—a very indefinite term, but, nevertheless, one which histologically will embrace the *totality* of the truly mentally endowed neurons, and the centre of which we might claim, as locally situated, where the special senses and motor neurons debouch in the psychic area and become linked up to it.

When in a state of deep thought or mental abstraction, or when becoming conscious in absolute darkness after deep sleep and before the mental neurons have had time to become continuous with or linked up to the cerebro-spinal neurons, if, with the mind's eye we introspect ourselves we shall be struck with a feeling, or consciousness, that the whereabouts of the mind, or *ego*, is intimately related to that cerebral area where the organs of special sense are centrally located, or where the afferent nervature and the efferent nervature become functionally related to consciousness.

In this region, spoken of popularly as situated "behind" and "above" the eyes, the victims of too hard work, worry, and insomnia sometimes express themselves as suffering the "tortures of the damned," and almost universally to speak of it as *the region*, or the *fons et*

origo, of their several maladies; and there can be no doubt, topographically regarded, all evidence, anatomical, histological, clinical, and self-introspective, points to this somewhat indefinite central and related cortical region *par excellence* as being the scene of the main part of focussed or concentrated mental and moral activity, and the cerebral region above all on which fall the effects of the sustained strain and worry which the civilisation of the present time has so much accentuated in incidence and intensified in virulence of effect, as witness the records of our daily press, and its teeming rehearsals of tragic incident and criminal occurrence.

Moreover, this is the cerebral region in which moral culpability is recorded with automatic regularity and self-searching intensity on the truth recording pages of memory and conscience, and where a foretaste thus is experienced of personal accountableness for crime and individual responsibility for the use of all the psychological and moral powers with which every human creature is endowed to a greater or lesser degree, and for the proper exercise of which both the material and immaterial parts of that creature are necessarily jointly punished or rewarded during the present state of being, besides posterity, even to “the third and fourth generation.”

The psychological, or immaterial, part of man must necessarily conform to the texture and quality of that part of his material organism set apart for its accommodation, growth, and evolution, and must be coloured and, so to speak, finished according to the inevitable law of production expressed in the words, *like produces like*; but a reservation must be made to the effect that every member of the human race, in spite of environment, can raise him or herself, by the exercise of will power and the cultivation of mental and bodily hygiene and tone, to a higher and better state of personal *morale* and *physique* than he or she was born in, and that, given a succession of such demonstrable occurrences, the race, as well as the individual, will ultimately correspondingly rise in the scale of civilisation. This, in fact, constitutes the *raison d'être* of all effort, individual and collective, for the use of every influence which can be brought to bear on the onward and

upward progress of the race, and affords incentive to public spirit to continue the use of every appropriate means to help on such beneficent progress, physical, mental, and moral.

To return to the subject of the meaning of the expression, "the mind's eye," which is alike familiar to the scientist and "the man in the street," we would claim that it represents, in the psychic economy, very much the same as the whole array of the senses represents in the economy of cerebro-spinal function, apart from the purely psychic, the material scene of its operations and functional use being confined to that cerebral area in which repose, in texturally inhibited but in functionally free and unrestrained existence, the innermost, the most intensely functional, the most dynamically and explosively endowed, and the last to appear or be evolved, of the neuronal structures, what we have denominated the *mental* or *psychic nerve cells* or mentally endowed neurons. This area, towering in functional character above the highest related *cerebral-spinal nerve centres*, sheds the intensity of its light-giving activity over the whole area of voluntarily controlled nervine work, acting as an *imperium in imperio* with the full responsibility of a "free will" agent and the necessary amenability to praise or blame, with whatever these bring in the way of reward or punishment.

In this cryptic material region of the psychologically endowed neurons there is, in the waking state, a continual activity of thought, thought begetting thought, and the law of "association of ideas" reigning supreme, setting its mark and seal on each day's record. Here, in this "*mentally endowed*" *neuronium*, to coin an expression, the mind is continually engaged in its thousand and one daily interests, saturated, it may be, with its daily cares, worried with its daily occupation of meeting its material wants, lurid with the flames of passion or the designs of avarice, effulgent with the beams of benevolence, and it may be "coruscating with wit and humour," or throwing its searchlights into the immediate present, the long past, or the far-reaching future.

This *neuronium* or psycho-plasmic fabric, is ever, when awake, aglow, *like a taper of radium*, with a light above and beyond what its textural envelopments can lay claim

to produce, hence we are driven by metaphysical necessity to conclude that a light which has never been “seen on sea or land” shines here inextinguishable by the fate and chances of matter, supplied from metaphysical sources, to reappear and shine again within congenial surroundings, and amid local conditions, about which it is as impossible for science even to dogmatise, as it would be futile and even impious. Suffice it to say, that science warrants absolute belief in the reality of both physical and metaphysical law, in the indestructibility of matter and energy, whether they be recognised as two entities or one, and *consequently in the immortality of the soul of man.*

From these three distinct sources, therefore, the reality and reasonableness of the doctrine of everlasting life are deducible—(1) from the universal longing and incessant desire of man for continued existence; (2) from the teaching of Holy Writ, and the extant sayings of collateral non-divine authorities; (3) the combined findings of both physical and metaphysical science.

It is not now, therefore, presumptuous to express the hope that a doctrine so humanly attractive and so warranted may ultimately exercise such a strengthening influence on human belief and purposive action that an impetus will thereby be given to the progress of civilisation which will be felt and sustained with ever-increasing progressive effect and result until the arrival of that time dreamed of by untaught humanity, that millennial period spoken of by divines, and that period of hygienic perfection and unfolding of human beatitude shall be pronounced, achieved, and terrestrially finished, and the dawn of an absolutely perfect day in the history of humanity be ushered in, which shall be coeval with eternity.

So far the physical aspect of the expression “the mind’s eye” has been the main theme of our study; let us now try to some extent, or as far as our powers of materio-dynamic analysis and synthesis, so to speak, will enable us, to picture to ourselves the metaphysical aspect of this transcendental subject, and to trace the steps of the evolutionary achievement effected in the conjoint progress of the human mind and body as they live out the span of conjoint life allotted to them on earth.

We have endeavoured, inconsecutively and fragmentarily, to trace the growth of the body from the coalescence of the dual parental protoplasmic elements to the stage of senile decay, when the dissolution of the materio-dynamic compact is naturally accomplished, and the partners assume their intrinsic individuality. At the stage of dissolution, or when the partnership is broken up, we have ample evidence, through our senses and reason, that the body resumes in time its original inorganic character, and that every atom of matter composing it is restored to mother earth, as "ashes to ashes, earth to earth," leaving the gross weight of the planet undisturbed and entirely unaffected. It is entirely different with the non-material or dynamic partner in the great compact or "combine" of human life when that compact is destroyed by death, or when the mind, soul, or spirit becomes disembodied. At the supreme moment of the dissolution of its physical envelope or dwelling-place, the central, immaterial, and indestructible essence known to the human race by these names, mind, soul, or spirit, leaves the body which it has up till then animated, in, we have every reason to suppose, a concrete, self-existent, and dynamically or spiritually unchanged form, with attributes of unchanged and unchangeable identity, and qualities which only imagination chastened by reason can conjure up and "the mind's eye" dimly perceive.

The complex array of psycho-dynamic, and now spiritual, activities, we must believe, are left intact by death, but loosened from their material host they emerge into an untrammelled condition of pure dynamic or spiritual freedom, intact, coherent, and capable of perennial existence and association with kindred existences and, although desire may be "father to the thought," there is every reason to suppose, superior, begins. The psycho-dynamic agencies here referred to, together with their related materio-dynamic agencies, consist of the molecular activities of every cell in the body, of the complexus of sympathetic nervine agencies, and of the great systemic nervous system, linked to each other by materio-dynamic strands of continuity, and attached to and one with the mentally endowed neurons of the "home," "habitat," or

“dwelling-place of the *ego*,” constitute the physico-metaphysical basis of our spiritual and immortal bodies.

As “side evidence” of the reality of this scientific finding, we might recite a single instance of the existence of the indissoluble strength of these neuro-dynamic bonds of union and continuity. Thus, an unfortunate human being loses a limb, lives, and re-enters the battle of life, when he “realises” that although the limb is physically lost it still metaphysically constitutes a part of his being, the sensations of its presence being too insistent and real to prevent the realisation of its physical absence from his body. In conclusion, we are, we contend, scientifically warranted in claiming that death of the body is none other than the beginning of a life beyond death, the physical part no doubt ceasing to exist as an organised and animated body, but the metaphysical part maintaining its existence and individuality, entering a new phase of being, and undergoing evolution in accordance with its intrinsic condition and altered environment. The fabric of the living spirit, being left intact when its earthly body, in which it has been evolved, has become inanimate and dissolves into its physical or inorganic elements, begins a new life or phase of existence in accordance with the plans and demands of an infinite wisdom and power behind and beyond all things in which or in whom “we live, move, and have our being,” from whom we have come and to whom we go, the “beginning and the end,” the “Alpha and Omega,” and the “Author and Finisher” of the Universe.

Inspired by these views, we feel constrained to say that the multiply confirmed doctrine of immortality is entitled to become a lever for the uplifting of humanity into the clear region of metaphysical reality, where the plan, design, and intention of the universe become coherent and realisable, and where the clouds of pessimism are seen rolling away like mists before the noonday sun, and the clear skies of optimism becoming spiritually visible from horizon to horizon. The evolution of the ideas of ghostly forms and angelic presences is intimately related, in some of its aspects, to the metaphysical transformation which the human being undergoes at death; thus, the

spirit, in the act of disembodiment, may be scientifically supposed to be shed by its physical host somewhat in the manner of the emancipation of the butterfly from its enclosing chrysalis encasement, with every dynamic feature and faculty intact, as it rolls, amœba-like, into the metaphysical universe, pushing aside its hitherto material garb, and assuming its full and proper metaphysical or spiritual form, in which state, anthropomorphically regarded, it is at least conceivable it may become realisable to kindred "departed" beings. The non-material or incorporeal form could only, therefore, *be the form* in which it could appeal for recognition to the kindred departed beings in the spiritual world, and that diaphanous outline, so familiar in the representation of ghostly and angelic forms, has happily suggested itself to, and been represented by, art; and which, according to some well-meaning people, has become a vehicle of communication between the worlds of flesh and spirit, sometimes, it may be conceded, for reasonable and desirable ends, but alas! generally for the satisfaction of mere curiosity, selfish, ignorant, and altogether undesirable. It is grotesque and abhorrent to think that the rest and anticipated calm of the spiritual world can be broken in upon by the frequenters of dark *séances*, and the exponents of the cult of mediumism, spiritual and material, and that it conceivably might be made the excuse, on the part of some of the right-minded, altogether to neglect and shun the subject of eternal destiny. Why not conduct these enquiries, if enquiries they can truly be claimed to be, in the free air and clear light of heaven, and before the full, unfettered gaze and united sight of humanity?

Of course these last remarks, do not apply to the "babes and sucklings" of Holy Writ, to whom "the deep things of God" are revealed, and to whom, as the possessors of a faith which accepteth, but questioneth not, all things, even to the absolutely unseen or invisible, become plain, visible, and tangible, as those of outer nature are to the unaided, educated senses and reason of grown man, but only to that class of mankind who have been more or less in evidence since the days of "the witch of Endor," and long before, on the banks of the

Nile, the Euphrates, the Ganges, and the far-off regions of the Orient, and it may be the primitive, early or Aztec races of the so-called new world, who have sought to extract from the unseen world, for *various personal and other purposes*, the knowledge it was supposed to *hide* within it, and which it was, and still is, supposed to be able to communicate to those familiar with the manipulation of more or less elaborate but contorted means and inventions for their own petty purposes, or for purposes of very questionable intention and application. It is an unspeakable pity that the ingenuity exercised thus has not been displayed in an unquestionable search after truth, and in the application of its discoveries to beneficent ends and purposes, to the end that no human effort should be lost to the amelioration of human pain and suffering, and the advancement of human civilisation and progress.

Regarded from this point of view, the destruction of the Alexandrian library, and the misdirection of so much zeal for research, and subtle intellectual exertion after the discovery of the so-called occult, have been, next to “the fall of man,” the two greatest misfortunes that have befallen the human race. With the non-occurrence of these two misfortunes the position of the world at the present time, in regard to its knowledge of the truth, would no doubt have been different and better than it is; therefore, let us put before ourselves the absolute necessity of obtaining a knowledge of truth for truth’s sake, and all else of practical advantage derivable from a knowledge of truth will follow “as the night the day,” inasmuch as, thus followed, the truth “cannot be false to any man,” for “*magna est veritas et prævalebunt*.”

Anthropomorphism has hitherto clogged the progress of sacred knowledge by its ingrained beliefs in the after death continued reality of the reign of “flesh and blood” methods, in the crumbling “dry bones” necessity of retaining personal identity, in the application of material forms and everyday human methods of calculation to the manner of spiritual evolution, and the shaping of divine ideals on the lines of human excellence—personal identity, personal after-existence in a glorified form of

the present individuality, moulding all forms of possible appearances and forms of superior beings or existences and personalities on human lines, and culminating in the representation of the personality of the Supreme Being on essentially the same human lines and principles.

We must ever be prepared to recognise that there are more things in our philosophy than have yet been dreamt of, and that it behoves us habitually, as time goes on, to adapt it to the present state of knowledge, and only to abandon it at the stage when its apparent boundaries have been reached. These boundaries, at different periods of the world's past history, have been sometimes *almost* indelibly marked by the erection of seemingly indestructible and most elaborately constructed monuments and temples, and other means for allowing the reunion of the still living and eternal spirit with the long since dead and temporal body ; at times they have been marked by less material or ponderous methods of signifying belief in continued existence of soul as a component, but merely passive, part of a universal whole ; while at other times the ingenuity of the devotees of particular cults, dogmas, and doctrines have elaborated services and liturgies dedicated to the service and worship of the Supreme Being, amid displays of sensuous trappings and belongings which have employed the energies of a lifetime to gain an expert knowledge of, and which have required for their propagation and upholding whole armies of the best manhood of the various countries of the world in which they have been evolved and flourished. No doubt, to many of these so-called sacred institutions and holy men the world owes a great debt of gratitude for holding aloft the torch of knowledge and spreading the influences of civilisation, when all around the forces of superstition, vice, ignorance, and error have been mustered for, and ardently intent on, their undoing and annihilation.

Now, however, that a natural ally, in the form of what may be called the army of science, is becoming possessed of a system of truth, of laws founded thereon, of an active and expert propaganda, and of hosts of far-seeing leaders, we are persuaded that the time is rapidly coming, if it has not indeed already come, when the two forces of

the church in all its branches and science in all its departments may unite their legions of trained followers, and, even if they do not fuse, present an united front to the common enemy, and go forward “conquering and to conquer,” till the enemies, physical and moral ills, be wiped out, the reinvigoration of the race be effected, and the reign of law, human and divine, be established on a basis of truth and righteousness *beyond the need of reform*, being adapted to the entirety of human needs and requirements, secular and sacred.

“There are wheels within wheels” is an expression made use of when things or inventions are elaborate and involved, and when we wish to convey a definition or a criticism of them in a sentence.

Taking advantage of that very human method of procedure, we are tempted, in conclusion, to venture to sum up, in a few words, the impression which the foregoing studies have left on our mind.

Man is said to be, and is generally believed to be, composed of soul, mind, or spirit, and body, and with this we can find no fault, but we would add that man, as we meet him in the flesh, is composed of three elements instead of two. The justification for this audacious statement is, that he maintains his *identity* unchanged through all the vicissitudes of existence, both here and, so far as we can infer, hereafter, and that the mind, though disembodied, must necessarily retain a belief in the maintenance of that identity; hence the mind, soul, or spirit, must, in turn, embody or contain the *indwelling ego*, the *irreducible, never-dying principle of life*, around which the material body was developed, and through which the psycho-dynamic energy of life was materio-dynamically interwoven, to inspire and innervate it—inside these material and dynamic elements or fabrics, being evolved from pristine spiritual elements, *is the essential ego*, with imperishable attributes, capable of maintaining its identity and able to afford it the means of eternal existence and development.

Thus far materio-dynamic facts and data have been available for metaphysical enquiry, and have enabled us to conclude that metaphysically there are only two separate

and concrete elements or entities existent, and that these are the *ego* and *non-ego*, respectively representing in their relative proportions the infinitely small and the infinitely vast, the microcosm of the individual human unit and the macrocosm of the universe, the two occupying separate planes of being, while indissolubly related as cause and effect, and, therefore, essential as constituent parts of a whole, and as absolutely continuous, the one with the other.

But this psychological and metaphysical finding, true as it is, arouses no mental enthusiasm, kindles no intellectual flame, and evokes no emotion, save that of the pleasure of attaining knowledge, and applying it, however imperfectly, to the unravelment of human destiny. We are compelled, therefore, as "babes and sucklings," to turn or return for support and energy to the pure font of revealed truth, where we find what science needs to complete its conquests in the cause of the truth, the whole truth, and nothing but the truth, where we are met with such expressions as "there is a *place* prepared for you"—not necessarily defined, named, or numbered, but capable of unlimited or indefinite expansion to meet all possible developments, and "but it does not yet appear what we shall be," the general and individual plans, as to the destiny of the human family not having been yet unrolled, the problems involved therein being but in process of solution, and the everlasting fiat withheld till "the fulness of the time has come," and a great definite arrangement, lasting for eternity, becomes effected.

With "the mind's eye" and reason, without a *violent* stretch of imagination, all this seems capable of realisation, and conformable to the requirements of truth and human destiny.

EXTRACT XIV.

ON THE IMAGINATION AS AN INSTRUMENT IN SCIENTIFIC PROGRESS, AND ON THE SCIENTIFIC USE OF THE IMAGINATION.

IMAGINATION as here implied refers to the supplementing, in the regions of abstract and applied science, of the work done by observation and experiment, where necessary for greater completeness of view, of individual sciences or isolated scientific problems, and for the unification of the knowledge of the universe and of proved data by lines of thought relevant to, suggested by, and flowing out of a full and clear realisation of the subject of thought or enquiry in which we may at any time be engaged. It is needless to say that imagination, divorced from exact knowledge, and given licence to ramble unchecked amid the proved possessions of the cultivators of the fields of truth, is not what is meant, neither is it the mere cultivation of the faculty meant, apart from its power to meet the temporary necessities arising in the daily experience of all scientists when they have exhausted their acquired supplies of accepted doctrine and become beholden to their own innate or self-emanating resources—when, in fact, they have literally come “to the end of their acquired tether,” and feel they but require its lengthening by the use of any other available resources within their reach, as, for example, when they have attained to or reached a psychological moment or point where independent forward action, or acceptance of defeat, have to be at last, and at all hazards, selected. Who will deny any such enquirer after truth under such circum-

stances the freest use of that faculty, the possession of which is held more or less by all humanity, and, we may add, much of the higher animated world, in order that he may, so to speak, "swing himself free" into the unknown beyond in order, peradventure, that he may alight on the nearest foothold of neighbouring fact or tangible fragment of accepted truth? Verily, whether we will or not, the resolution is usually formed, and the required "leap into the dark" taken, and often with the best results both to the progress of science and the advance of civilisation. Many a discovery and invention owe their origin and attainment to such fortunate occurrences, let us, therefore, welcome every effort of the scientific athlete and the earnest enquirer after truth to throw themselves aloof from the entanglements and limitations of received doctrine when they have arrived at the confines of their knowledge, and to take up the *rôle* of pioneers in discovery in the great continents of the unknown which everywhere stretch around our "cribbed, cabined, and confined" world of accepted truth.

Imagination, as a trained faculty, is one of the most fruitful of great results in the everyday progress of mankind, whether in the realms of art, poetry, music, or all that is "excellent and of good report" in the world of literature; why, therefore, should we forbid its chastened use in the regions of even the severest science, where its presence can relieve the tension and monotony of the most rigid logic, and assist the slow and exact processes of deduction and induction, smoothing and harmonising the contradictory and irreconcilable, casting a glow and charm over the life-work of even the greatest stickler after style and form, and giving a completeness of detail to the whole fabric of knowledge pleasing to the "mind's eye" to look upon, and attractive to the searcher after truth?

The history of discovery and invention generally, and the glimpses of autobiographic experience bearing on the matter so plentifully recorded throughout the pages of literature, past and contemporary, amply prove that imagination has never been absent as a factor in the work and course of progress, and a potent instrument in the

hands of every climber in the higher and more inaccessible regions of knowledge. Here it has supplied incentive to continue the endeavour to scale, and to penetrate when foothold was being lost and the darkness of the unknown was thickening around the indefatigable explorer, and has been to him to some extent its own recompense when success has not been achieved, in this last respect sharing with "virtue" the distinction of repaying itself, and constituting "its own reward."

The astronomer, from lowly imaginings and meagre beginnings in exact knowledge, and minus the helps latterly afforded by inventive genius, has discovered in otherwise inaccessible and almost transcendental regions the existence of law and order and the procession of worlds beyond the reach of immediate observation, extending into regions only dimly realisable, even by the chastened and experienced imagination, but, nevertheless, quite allowable as an exercise of scientific faith on the lines of infinite continuity and extension.

Here, "where eye has not seen nor ear heard," imagination floats on wings sustainable in the medium of faith, with a feeling of as complete realisation as when the telescope is made to survey the features of the moon's face and scan its geographical complexion, and when, allying himself with the physicist and the chemist, he turns his attention to the distribution of "the elements" in the structure and behaviour of the heavenly bodies, and realises that, in the great astral sphere or commonwealth, law and order exist of a character far transcending in the harmony and exactitude of their working any thing or system on the face of this earth or amongst the most civilised family of man.

In like manner the men of "light and leading" comport themselves in every branch of human knowledge and along every path of research—the searchers after truth in every department of knowledge and the exponents of every science which the course of events has brought into existence, therefore, stand, or should stand, "shoulder to shoulder" in their march towards the common goal of truth, scouting independently, or joining in proper battle array against the common forces of the "great unknown."

There can be no doubt, we think, that, under the circumstances here indicated, the first impulse towards the use of combined effort in the furtherance of the common cause of truth on the part of the participators in the great common work was prompted by and originated in the *views ahead* presented by imagination to the pioneers in the forefront of invention and discovery; it, therefore, behoves every searcher after truth still to avail himself to the full of every well-founded and genuine imagining, from whatever source it may emanate, in order that, fired by the "light ahead" which it affords, he may be able to take, it may be, only one step forward in the great march of discovery, to the end that he may assist in realising the great destiny of the human race and its emancipation from every influence which mars its progress towards its accomplishment.

That a full and proper use should be made of the faculty of imagination there seems every reason to believe; it therefore becomes necessary that we should be able to distinguish between imagination, warranted as being founded on exact knowledge, and suggested by lines of continuity leading from the known to the unknown, and imagination founded on uneducated impulse, and prompted by unscrupulous motives for vain and, it may be, ignoble purposes.

Imagination of the kind serviceable to the highest aspirations of mankind has been conspicuous along the whole lines of progress of the human race, as history enables us to see, and believing that "*human nature has been and still is human nature all the world over,*" we are persuaded that one of the greatest influences in the raising of man from savagedom and barbarism to civilisation, as now seen, has been and is the use of this faculty.

Has not the faculty of imagination been largely made use of on the part of inspired writers, and those to whom these writers appealed and still appeal? Was not the faculty of imagination largely cultivated by the ancient Phœnicians in their many maritime adventures and accomplishments? Did not the illustrious Columbus mark for ever the value of properly founded and rigidly followed imagination? Have not all our great voyagers

and discoverers been inspired by the same faculty? And do we not still see around us, amongst the great army of research and discovery, the torch of imagination held aloft, as they turn their eyes on the things which have not yet become visible, but which, they are led by this faculty to believe, lie immediately or somewhere before them? All round us now, all behind us, and all before us is irradiated by the light of imagination. The human race, *par excellence*, has been endowed with this faculty for the accomplishment of the great ends and aims for which it has come into being; who, therefore, will argue that experience, and experience alone, constitutes the "Alpha and Omega," and is to be sole guide to the workers in the field, as well as the sole test of the genuineness of human knowledge?

Observation and experiment, conducted by stringent methods of logic, inductive and deductive, are no doubt absolutely essential in the great search after truth; but these, divorced from the inspiring influence of imagination, will fail to reach the highest levels of discovery and invention, and, therefore, will fail in placing man on that plane of existence to which his supreme qualifications, as compared with his lower animal relations, entitle him to attain.

While imagination may be described as a picturing by the aid of images, already more or less fully realised by the intellect of images lying outside of the experience of the individual or of the race, so the manner and method of imagining must conform to the necessities of the situation on the part of every imager, be he engaged in original research, deducing laws from the experience of the past for the regulation of the future, depicting the subtle beauties of ever-changing scenery for the delectation of those to come, laying the foundations of structures, material and immaterial, which are ultimately to embody great conceptions, or pointing the way to continued existence or immortal destiny, along the lines of continuity, material and immaterial, in actual and logical coherence, and continuity of accomplishment, in imperishable actuality and sequence of occurrence, one thing leading to another, one event merging in another, for ever and ever,

in obedience to the law of *never-ending and absolute necessity*.

Imaginations proceeding on lines of actual knowledge, leading back into antiquity, showing in full significance their present proportions, and indicating unmistakably the trend of their probable progress beyond the confines of our own immediate time and place, can be safely followed so long as the law of probability, so to speak, enables or will enable the imager to sustain powers of *reasoned* thought. This latter essay, in fact, constitutes the last and highest endeavour to scale that line of demarcation which lies between the present and the future, and between the worlds of sense and faith. If, therefore, any searcher after truth has so mastered the subject that it has become a real possession to him or her, and that it has at last ceased to accrete fresh truth, and has become, so to speak, shelved, let him or her take fresh inspiration and encouragement from the unexhausted, or, it may be, unused faculty of imagination, which he or she may or must possess, and let that faculty, founded on the bed of complete knowledge of the subject in question, coruscate on, and light up the subject, so that in the unwonted radiance cast on it, it may reveal a way or ways to fresh discoveries, and afford a fresh setting of the subject in its matrix of surrounding truth.

To particularise, let us take the example of the modern method of clinical diagnosis of disease. Since the days of the Fathers of Medicine, down to the termination of the middle or dark ages in Europe, the method of diagnosis of disease was of the most empirical and arbitrary character, being deduced from the appearance of certain signs or symptoms, which had come to have a settled place in the category of morbid phenomena, and the occurrence and sequence of which determined the generic names of disease. This method sufficed to meet the equally empirically guided treatment of disease, until the desire for more exact knowledge of the significance and meaning of these disease entities resulted in the foundations of anatomical science, then physiology, and ultimately pathology, being laid, the evolution of all of which has been characterised by somewhat rigid progression, along the lines of observation and

experiment, at times lighted up with scintillations of forethought and scientific imagination, and a consequently safely constructed edifice of solid, but necessarily still incomplete, biological truth.

The structural and functional knowledge thereby placed at the disposal of the clinical observer enables him now to unravel the hitherto absolutely obscure problems of the action of morbid influences in the causation of disease, and confers the power so to define and demarcate the areas of these influences by structural and functional limitations, that he can, with comparative exactitude, diagnose, and also to a large extent indicate, an appropriate treatment for diseases of all natures and characters.

Exact clinical methods of diagnosis and treatment being founded on the scientific knowledge of the organism affected, the manner of causation of the morbid phenomena which it displays, and a growing power to cope with the ravages of the various disease-producing influences from which it suffers, it becomes warrantable to indulge in the chastened imagination that human life will ultimately be made to last out to its legitimate close, with the enjoyment of health begotten of the abolition of morbid entities, and the absolute reign of physiological law and order throughout the entire human race.

In this process of increased precision in diagnosis of disease, the indications of the proper methods of prevention and treatment, and the wholesale education of the people in the laws of health, hold out the bright hope that the day may at last dawn when imagination will end in and embrace realisation, therefore, we again bespeak a free and exact use of the faculty of imagination, in the rôle of suggesting and perfecting the means to this glorious end.

This latter use of imagination pre-supposes the possession by its employers of exact knowledge on the subject involved, and the exhaustion of that knowledge in the cause of original research on it, in which case he is permitted to give rein to his imagination, with a deliberate intention to accomplish his ambition of adding to that exact knowledge.

Under all such circumstances, in the experience of the advance of knowledge, it is found that free use has

generally been made of this faculty, and that one leader in research has handed on to another his torch of imagination, ere its radiant influence has been extinguished, or its "light gone out."

We have only to look at the history of discovery and invention, in whatever department of knowledge you like, to discover the truth of these observations, and if exceptions be found to their absolute truth, it will be evident that these are only examples of *delayed* operation of the rule. It follows, therefore, that the use of the faculty of imagination is all but universally operative in the great process of human advancement in knowledge, abstract and applied alike, and that, as a consequence, it behoves the leaders of human thought to stimulate and, at the same time, to regulate its exercise, to the end that whatever services it can render should be obtainable from its operation, and that any possible harm it can do to the cause of advancement should be obviated by properly devised modifying and preventive means. Indeed, this matter seems of such paramount importance in relation to the great work lying before those responsible for the proper direction of the affairs of the world generally, that the institution in our universities of chairs for its cultivation would be amply repaid in connection with the repression of the wild uses to which it is often put, and the encouragement and regulation of it as an instrument of general progress and special culture.

So encouraged and regulated by a consensus of cultured opinion, it could not fail to have a stimulating influence on the minds of men generally, and be the means of starting those destined to be men of "light and leading" on the special paths in which, by their innate ability, they are destined to out-distance and to outshine and become the recognised leaders and pioneers.

Imagination is always exercisable, and the materials on which it can be exercised are more or less always in evidence around us, it therefore does not impoverish its possessor if legitimately used, but may enrich him "beyond the dreams of avarice," and while he reaps a blessing it may become a source of untold riches to his fellow-men, thus blessing both giver and receiver, and,

it may be, adding another name to the *most select* category of the "immortals."

The origin of the word is lost in antiquity, but its use has been universally indulged in by the human family, and it has been responsible for the origin of every religious system and the evolution of all mythologies, thus leaving its impress so distinctly and indelibly as to be "read of all men," and so as to afford a clear insight into the history, the mental and moral character, and the form of civilisation of its producers.

Imagination, consequently, covers a wide expanse of what constitutes the sum of human knowledge, and when entirely eliminated, if that were possible, from that sum, it would be found that what remained had shrunk into proportions quite possible of acquirement by the candidates for university honours and participators in competitive examinations for the public services.

This mass of knowledge claimable by imagination, and still incorporated with the material of a liberal education, calls purely for recognition on its own behalf as a non-negligible quantity, and, therefore, for a special recognition on the part of all engaged in the responsible task of regulating and imparting knowledge, and shaping that education. A distinct value, therefore, we think, attaches to the separation of subjects of knowledge into their proper categories, to suit the requirements of the various intellects constituting the community of student-scholars.

EXTRACT XV.

ON FAITH, AS APPLIED TO THE TEACHINGS OF
SCIENCE AND AS COMPARED WITH FAITH AS
DEFINED IN HOLY WRIT.

SCIENCE, it may at once be said, is, in a sense, synonymous with faith, and consists in the discovery and appreciation of the laws by which the universe is governed and administered, each new fact of science falling, naturally, into the category of proved and undeniable truth *to be believed* by the scientist as undeviating and inexorable in recurrence, and working for ever and ever; moreover, all so-called living things, and all conscious beings, thus, of necessity, conform to the *law of faith* by belief in their undeviating consistency of recurrence, in accordance with the type they represent and the developmental obligations imposed upon them, as the parts of a great whole, or universe, all parts of which "work together in unison."

The expression, *the universe*, is an idea evolved by humanity from its daily experience of the "passing of events," and the appreciation of its environment, and one which becomes essential to the thoughtful mind to enable it to distinguish between the whole and its parts; it embraces, therefore, the greatest generalisation ever accomplished by man, and constitutes the foundation on which all philosophical, scientific, and folk systems of "accounting for things" seen and unseen rest. It must, therefore, be cherished by humanity as the "Alpha and Omega" of its knowledge of itself and nature, because through it humanity realises the great outstanding fact, that it constitutes a merely fractional part of the universe.

Faith, in the reality of such truth, serves to repress the arrogance of man, and enables him to discover that he is really but an atom in the inappreciable "dust of the balance," and therefore, to all intents and purposes, a negligible quantity, while, at the same time, it stimulates him to make the best of his opportunities to make himself appreciable in the absolutely true and exhaustive *reckoning* of the universe in all its parts, the atom, then, having its place recognised and its essential value as an indispensable part of the whole assigned to it, with the precision of absolute law and as the reward of duty done and purpose fulfilled.

If we might say so, faith, as between the component parts of the universe of both the so-called animate and inanimate alike, permeates the whole, *i.e.* every unit of that whole responds, with unquestioning alacrity, to the behests and necessities of the whole, whether consciously or unconsciously, and thus the progress of universal events is regulated by universal assent, notwithstanding the sometimes apparent frictions between passing examples of them. Thus, great physical masses cling to each other by the exercise of cohesion, chemical elements ally themselves by the exercise of affinities, the ivy hugs the ruin with the strength of absolute necessity, the tiny fish companions play about the cavernous jaws of the ravenous shark, the parasite insinuates itself into the good or bad graces of its host, while still a hundred and one other examples, equally obvious, might be enumerated, in which the exercise of mutual faith, trust, or confidence, characterises the relationships maintained between the elements composing them, all proving that faith, or its equivalent, permeates nature, and is largely responsible for the administration of her laws and for the shaping of her destinies.

While we thus recognise that faith, or *its equivalent*, is largely in evidence throughout the inanimate and lower animate world as a factor in the great work of evolution, we must be prepared to find that it projects itself along the lines of animate existence into the regions of conscious being, and that it there receives its highest development amid the higher animal world, and finally in the human family, where, at last ceasing to be blind and assuming

the character of a mental attribute, it is exercised, or withheld, at will, and assumes the position of the chief determinant in shaping and colouring the life of the individual and the community.

In pursuing our enquiries into this aspect of the great subject of faith, we at last find its highest development in the appreciation of "things not seen," and in the realisation of a world beyond the powers of sense to appreciate, to which the *instincts of humanity* point backwards and forwards, and regarding which some of the greatest intellects of the past and present have done, and are doing, their best to form an estimate of it, and with more or less consistency and success, have endeavoured to found a system and to raise a religious superstructure which will embody faith and ensure obedience to the laws which its particular interpretation necessitates and determines.

Amongst the human family scattered all over the world, faith, as between man and man, community, tribe, and nation, is essential for the conduct of business of commerce generally, of amenity to the laws, local and general, of acquiescence in the manner of their administration and contentment with the state of things as they are, and even where the "state of things" is universally acknowledged to require amendment, faith holds out the promise of the ultimate evolution and obtainment of that amendment.

From all this, it must be concluded that faith is the universal cement alike of the animate and inanimate universe, that without it the world could not exist, that material change in orderly fashion would be impossible, that the relationships of living beings would be constantly strained, that the conduct of man to man would be for ever arbitrary and uncertain, and that the realisation of the higher aspirations of humanity would be an impossibility, or a monstrosity, dictated in outline by the eccentricities, the irresponsible promptings of ambitions, and the aspiring designs of individual members of the race, which would live but for a day, and give place to a repetition of ineffectual effort and ephemeral performance, and so on, ending without progress or improvement to the individual or the community for ever and ever.

Let us rejoice, therefore, that faith exists, and let us

hope that confidence in its beneficent reign and the outcome of its inspiring operation will increase with the passage of time until the dawn of that period when humanity must vacate this planet, and find another region in infinite space, where room will be afforded it to pursue its great destiny, freed from the trammels of earth, and assured in the exercise of its more and more glorious attributes "throughout the endless ages of eternity."

Hope, here, may be said to "take up the wondrous tale," and "proclaim" that its sustaining and inspiring influence flows from a font of justification, fed by the visible, tangible, and sentient stream of faith trickling from the wide universe of nature, and the records left by all of "light and leading" who have left their records behind and entered on that phase of being, the existence of which is at once the "finding" of science and the innermost and most deep-rooted belief of humanity. Hope may be said, therefore, to at once feed upon and to inspire faith, and it will be found, wherever these two great attributes predominate in the nation or the individual, that there man is to be seen in his fullest development of the best characteristics of his race, in the enjoyment of the highest blessings of civilisation at its best, conforming without a murmur to the requirements of his environment, and giving an impetus and impulse to the powers "that make for righteousness," which are felt to the remotest corners and confines of the earth.

Faith, founded on the broad plane of universal knowledge and truth, inspired by hope emanating from the same sources, aided and strengthened by the universal assent of man, which union will ensure a strength past the power of the prophet to conceive, is surely likely to be a *lever* by which the race can, and will be, raised to that level on which, at last, the day of true brotherhood of man will dawn and brighten into the full sunshine of universal peace, sympathy, and love, never to be darkened by the gloom of oppression, self-seeking, or unbrotherly action.

In thus speculatively forecasting the probable outcome of the fraternisation and combined working of all sections of the great army of searchers after the truth and workers

in the harvest field of knowledge, we observe, through the eye of faith, aided by the telescopic powers of hope, that the last state of the long generations of man may finally attain that goal, dimly visible to every thinking man, believed in by the most far-seeing and best, and absolutely proclaimed as true by the teachings of all religious systems worthy of the name, but more especially by that religion which has dominated for the last two thousand years, the progress of religious thought and action of the leading "powers" of the world, at any rate the Western world. Should this consensus of elevating, purifying, and ennobling progress continue, and we see no cause for doubt on the subject, then the *régime* of seeing "eye to eye," and acting for the one great end of universal good, will become apparent as the process of evolution continues, until it must end inexorably with the precision and certainty of the sequence of cause and effect in the production and continuance of the reign of law, so perfect in its working that every unit of the great living and acting human governmental machine will spontaneously and affectionately take its place in the family circle of absolutely united humanity.

Quite naturally, therefore, and in accordance with the laws of moral growth and development, the great problems involved in the operation and cumulative effects of brotherly sympathy or love will unfold themselves as the human race becomes emancipated from the bonds of cramping ephemeral beliefs and temporary barriers of false systems, and as individual, racial, and international feuds and frictions cease from out the machinery of human progress.

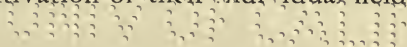
Progress, thus, will necessarily be aided in "the fulness of the time" by the united influence of every such emancipation, individual, communal, and national, and as physical science has progressed, as intellectual and mental activity have been brought to bear on its abstract and applied problems by its votaries, the end amply justifying the means, so will moral progress follow the efforts of the intellect and the fully awakened moral consciousness of humanity; therefore, we claim that religion must in the end, when freed from the thralldom of anthropomorphism,

rise into the position of an unquestioned, and ultimately ununsurpable, kingdom, wherein will dwell the fuller development of the human family in an atmosphere of righteousness, and all that can flow from perfect conformity to its requirements.

It surely, therefore, behoves mankind throughout the world to work its best in aid of the accomplishment of this glorious work with no other but a single eye and determined purpose to further what must be a united task and a great general developmental process, feeling in its individual, as well as in its communal capacity, that it is adding fraction after fraction to the great sum of human effort to forward, and ultimately to achieve, the perfection of the human race, and so to aid the great general purposes of the Creator and Governor of all things.

The leaders of thought and the pioneers of knowledge throughout the world, in whatever state they be, recognising their individual and communal relationships to the great forward and upward progress of humanity, may do much by respecting each other and the quality of the work they are doing in the cause of general progress, to expedite the arrival of the race at the great goal of complete adaptation to the requirements of its environments and the attainment of its destined position in the hierarchy of intelligence and responsible being; let them, then, close their ranks, present a united front to the world of ignorance and error, and fight "shoulder to shoulder" in "the good fight of faith," in the field of emancipation from evil and the conferring of good, which is the highest ideal yet attained to by civilised man. Let there be no more saying that I am of this school and I am of that school, but, feeling united to one another by the bonds of a common brotherhood, by a consciousness of working for the same cause, and by the recognition of the fact that they are each cultivating a patch of the same great field of truth, let them go forward in the glorious common task of realising the great destinies which they each believe, with lesser or greater strength, await perfected humanity.

By so doing, we are persuaded that they will each become possessed of a stronger desire to accomplish more and more the cultivation of their individual field of work,



in order that they may be able to add more to the accomplishment of the great common work which lies before united humanity to accomplish, and so be able to feel the truth of the divine saying, that "it is more blessed to give than to receive," and that it is not an injustice to be made to recognise that "to whom much is given, of him much shall be required."

While we have faith in, and are persuaded of, the truth of these contentions in our own mind, we cannot fail to perceive that the time is still far distant when they can be realised generally as accomplished facts, we are, nevertheless, hopeful that an appreciable growth of opinion may take place as to their soundness, and that a corresponding strength will be given to the faith and belief that special and general knowledge, and individual and communal attainment of it, will together advance the cause of truth and civilisation, to the end that every step of the progress made, in whatever direction, according to the requirements of truth, will bring the end in view nearer and nearer, both theoretically and practically.

EXTRACT XVI.

“CLEANLINESS IS NEXT TO GODLINESS,” PHYSICALLY
AND THEOLOGICALLY.

CLEANLINESS will thus not only be entitled to rank “next to Godliness,” but will, in conjunction with it, and as the instrument to achieve the material advancement of the people, enable it to lay a foundation for the quicker rearing and longer standing of a spiritual edifice or kingdom, in which will be taught and practised all that is noblest and best in the annals of Holy Writ, and all “of light and leading” that can be extracted from the teachings of so-called profane literature and the findings of scientific effort and culture.

As leprosy represents or emanates from the accumulation of matter no longer useful in the economy of the human body, and calls for its prevention or removal, so do all of the admitted spiritual anachronisms and effete theological systems, which are usually only historically interesting to the specialist as “time markings” in the march of the evolution of divine truth, represent the no longer useful, and thus far, therefore, the obsolete and, it may be, hurtful call for abandonment as no longer effective instruments in the achievement of the highest destiny of mankind, but, nevertheless, as instruments to be kept *reverently stored* in the archives of human progress for comparative study and for use in the schools of Divinity and Religion, and as materials for the equipment of the militant forces of applied theology.

EXTRACT XVII.

ON "THE MEETING AND, IT MAY PERHAPS BE, THE
CROSSING AND PARTING OF THE WAYS."

WHAT is meant by the use and adoption of the above title is to call attention to the approach towards each other, now becoming apparent, in their investigation of the same great root principles of human existence and destiny, of the two great schools most actively engaged in the investigation of such problems as the *ultimate findings* of science and revelation or theology, and the consequent possibility there exists of the two combining their forces for common purposes and for mutual help along what may become *the common way* in the advancement of civilisation in its highest aspects, the amelioration of the common lot of man in its every-day aspects and the focussing of effort, speculative and practical, for common ends and universal good.

Historically the evolution and growth of theological opinion have left on every succeeding phase of the world's civilisation in outstanding relief the disposition of the human family to crystallise into more or less definite form the sum of their theological beliefs, each occurrence of which, at its various stages, is marked by the use of anthropomorphic imagery and methods sufficiently characteristic to enable the observant and comparative theological student of to-day to form a fairly accurate opinion as to where and when the particular occurrence was located and evolved or originated, and to appreciate the intrinsic value of a psychological principle so widely distributed and created for good or evil in the past and the present of the human family.

The anthropomorphic manner of representing theological ideas, essences, dogmas, and opinions has necessarily been limited, being confined in its range by the limitation of its component instruments within the, for the time being, or at any particular new departure or fresh expression of theological opinion, very narrow radius of positive knowledge and power of expression arising from a rudimentary or non-existent appreciation of the natural laws of the universe, and the necessity for representing to a more or less ignorant people in a more or less intelligible form subjects pertaining to an order comparatively outside the material world, and at the same time lying within and inter-penetrating it in all directions. However changed for the better, the condition of things theological may now be thought by some to be, we are yet very far from having reached that "point of view" where we can *clearly apprehend* the nature of the spiritual world and the forces which the human race at all times and now have continually interested itself in, hence we must be prepared to accept, from whatever quarter it may come, with readiness and thankfulness, any fresh light which can in any degree illuminate the prevailing darkness surrounding this absorbingly attractive region of theological insight and learning, so fraught with the realisation of past, present, and future human destiny.

Hitherto theology has pursued her course *to a great extent* unaided by what is popularly called secular agency, and, no doubt, has laid the human race under the greatest obligations for the intrinsic worth of the services she has been able to place at its disposal; but viewing the "possibilities for good" which have at all times existed within and around the church militant, we are unable to persuade ourselves that she has at all times realised everything for good which her position offered and which her great obligations necessitated. We are far, however, from finding fault with this, but we do beseech her, in her endeavours to meet her responsibilities to mankind, to accept of every aid which will enable her to perform her duties better by reaching the intelligence of the people, bending it towards an ethical advancement, and ministering to its spiritual growth by a rational

use of the pabulum of truth from whatever source derivable.

Viewing the relationship of revelation and science so-called in the light of these observations, we would express a fervent hope that the aloofness, not to use a stronger term, which has hitherto characterised that relationship may become so modified that a spirit of mutual respect and goodwill, if not joint effort, shall pervade their progress in the future, for their own welfare and that of the world at large.

This, we think, could only engender a deeper and wider spirit of charity in its most catholic aspect, and evolve a more living and true interest generally in the strides of civilisation, and the concurrent emancipation of the human race from the domination of every material as well as spiritual influence nocuous to its present welfare and future destiny.

EXTRACT XVIII.

IT IS WRITTEN : "MAN SHALL NOT LIVE BY BREAD ALONE, BUT BY EVERY WORD THAT PROCEEDETH OUT OF THE MOUTH OF GOD." A LAY CREED.

THIS is one of the most famous and subtle sayings in Holy Writ. The phraseology is anthropomorphic, but its meaning is divinely transcendental, the words are alive with the essence, *the very spirit* of religion, as it were, while they teach the last scientific findings of human knowledge in relation to the problem of the sustenance of life, and throw into the axioms deducible from human experience, as they are here crystallised, a depth of meaning and a profundity of realisation of the deepest-seated problems of human life which is altogether startling in its reality and novelty, and which throws a halo of purposive design around the institution of the human family in its higher relationships which may do much to stimulate human interest in the accomplishment of human destiny.

These words prove the truth of the teaching of human science, in that they acknowledge that man lives by bread in so far as his material wants are concerned, and his position as a member and citizen of the great animal kingdom is concerned, but that there is an overwhelming great reserve of life in store for him, both here and hereafter, which the satisfaction of his material wants, however these may be essential for his present condition, do not reach or minister to, and, therefore, that it is essential he should recognise that this transcendental side of his being should be provided for by his employ-

ment of the immaterial pabulum put within his reach, through his exercise of the psychological and spiritual faculties and energies of which he is consciously or unconsciously possessed.

Of course, it has been denied all along the ages, and is still denied, that man lives by anything else than bread, and affirmed that his wants are entirely material ; of these beliefs it does not concern us here to speak beyond expressing from the point of view of science, that man really consists of an admixture of material and immaterial entities, that these entities are indestructible, and at their severance by death both entities continue to pursue their respective destinies in such manner as their respective elements by the laws of matter and energy determine.

The life, the *ego*, being an immaterial independent existence, pursues its concrete course, while the material body is reduced to its original condition or elements by the analytic activity of mother earth.

As the breath of life was originally infused into primitive man, and continues generation after generation to be infused into him as he "arrives on the scene," so does that life or vital principle which dominated and innervated even his pre-breathing organism remain untouched by the incidence of death, and continues to live when the material necessity of drawing the breath of life has ceased, and complete dynamic freedom been obtained, in obedience to the immaterial and dynamic necessity contained in the pregnant words : "man liveth by every word that proceedeth out of the mouth of God." That is to say, in obedience to the inalienable and inviolate laws of the universe, a few of which laws have only yet been dimly or imperfectly realised by the intellect of even the greatest exponents of "natural truth," but sufficiently clearly, nevertheless, to warrant the statement quoted, and to proclaim the continuance of the eternal truth contained therein.

As bread is essential for the physical sustenance and life of man, so is the law of immaterial or dynamic sustenance to maintain and develop the inner and immortal life of man, and to perpetuate the great evolutionary work, of which the material part only has been

physically realised as a concrete experience and foretaste of that spiritual existence enjoyed by some of the best of humanity even in this life, but which necessarily must be the final lot of all. Human life is multiple, and that portion of it passed here composed of stages running into each other, and constituting one continuous whole, which should but does not always reach its "allotted span," is but preparatory to other stages which science and revelation alike attest will follow with the inexorable certainty of cause and effect in accordance with the absolute necessities of definite law and order for ever and ever.

The appreciation, therefore, of the words of this thesis should prove a great individual and communal incentive to the cultivation of the dual aspects of life, in order that the most, so to speak, should be taken out of that life, and that death, when it does come, may release that life to pursue its destiny wherever it may be determined by the reign of law to which it has already conformed, and which will still enable it to conform more and more. Whether life is "here or hereafter," therefore, there is absolute continuity between its parts, the difference being only in relation to its material and dynamic conditions and environments, the essential oneness being continued *ad infinitum*, while development of its character and attributes will in like manner be subject to the operation of eternal law, order, and necessity.

Moreover, the applicability of the words is capable of immediate and constant use in the everyday experience of man, his "natural" and better selves being equally included and interested in the practical working of the doctrines advanced in them, and of the great personal obligation lying on every human being of working out his or her "own salvation."

When material wants have been met, it is very frequently assumed that all obligations and necessities have been met, and that "sufficient for the day is the evil thereof," but that is only half the truth; true, the material part of man has been provided for, but the immaterial and better has not thereby been provided for, and as that is equivalent to his eternal part, provision for that also requires to be

obtained ere he can afford to say that the "whole plan" occupies the position described in the sublime words: "It is written that man shall not live by bread alone, but by every word that proceedeth out of the mouth of God."

Natural designs, works, laws, and order, are they not the articulate expressions of divine speech, yea, the *very words* of God? which have been heard ringing throughout space and time from their beginning, but audible "from eternity to eternity," overspreading these temporary barriers and making the universe one and indivisible, without beginning and without end, in which, whether we wish or will it or not, our being cannot do otherwise than be subservient to eternal ends and purposes, a natural *dénouement* attestable by reason and abundantly visible to and supported by the eye of faith—a faith resting alike on the foundations of human knowledge and that divine teaching which has so wonderfully and succinctly drifted down through the ages to the present generation of men, and which still maintains a hold on human belief which no influence however strong has done more than produce a mere temporary arrestment of its all-powerful influence on human progress, and the ultimate unquestioned reign of *true religion*.

What matter material matters when we individually approach "the valley of the shadow of death"?—only "the shadow," be it marked. At that supreme juncture, all material and sensual appetites having ceased, all overwhelming material interests slipped away, all hold on earth gone, we resign ourselves to the dominion of the inexorable law of death with what intelligent or blank concern we can command, and with what strength of expectancy we are able to exercise.

Who that has been brought into frequent contact with the dying but has not been struck with the variety of emotions elicited by nearness to the end of life?—and who that has had the opportunity of studying the life and character of those who lie dying but has not been impressed with the truth of the saying that, "as a man liveth, so he dieth?" proving even here, that there is a continuity of development in life and death characterised by consistency of quality and texture, regulating the whole

constituent fabric of life to its terminal fringe, which betokens an immediate entry on a farther stage of development and progress, in accordance with its intrinsic qualities as a material thing, and its dynamic qualities as an essence that resists death, or as an organism altogether immaterial, and hence, spiritual.

Here the sublimity of the words we have quoted steals into the waning consciousness, and infuses a strength of faith which lights up the exit from the material world, and reveals through the "shadow of death" the longed-for entrance to the scene of immaterial realities, which "it has not even yet entered into the heart of man to conceive," the *spiritual* being *inconceivable* by the *material*. So says lay experience, but here let us resign this glorious and sublime subject into the hands of those capable from their special training and knowledge to apply it to the wants of humanity—and should it in any degree be found applicable to such service, and consonant with divine or revealed truth, in the fervent hope that the universal affirmative of nature's teaching may assist revelation ultimately to overpower and supplant the sometimes boldly asserted negative of human teaching, and to inspire and vitalise the supineness and inertia of human purpose and effort; and as a corollary to the words "as a man liveth, so he dieth," we would add these—"And I heard a voice from heaven saying, Write, Blessed are the dead which die in the Lord from henceforth; yea, saith the Spirit, that they may rest from their labours, for their works follow with them."

Having absolutely satisfied ourselves, from the scientific outlook, of the certainty of life hereafter, we may, we think, apply these last quoted words to the character, at least, of the earliest stage of that after-life, and would claim that that character is one of continuity and consistency—like the "going down" and the "rising" of the sun—the works done by, not the materials won by or belonging to him or her, which are left behind with those that remain, and have no representative, value, or ability, to affect the immaterial transaction represented in the act of death, the material body, with all its material belongings, being left as the absolute property of the

planet and all that belongs to it, as absolutely its own, of character, of good done, of services rendered to the cause of truth, of work accomplished for the benefit of others, without fee or reward, save the inward satisfaction of the innate consciousness and conscience, and of the thousand and one occasions met, when the interests of self have been spontaneously subordinated to the advancement of those of others, and to the still greater number of unenumerated acts of kindness because of their lifelong accumulation, in which the life of true religion has been lived without its being taken note of by the liver, with all that can be called "true and of good report" in the "daily walk and conversation of life."

These are some of the *everlasting* "properties and belongings" of this life, entitling "the dead who die in the Lord" to be received into the blessed condition of "rest" defined above, as that which is awaiting everyone entitled to it, with the certainty of "cause and effect," and as a satisfaction of the laws of everlasting justice and truth. Thus, the elements of uncertainty and chance, favour and accident, are absolutely eliminated, at the fountain-head, from the reign of law in the spiritual condition into which man enters at death, and in which his future evolution and development are ensured to all eternity—which is surely a goal to be aimed at by all, and in the aiming at which, virtue, if it does not succeed in obtaining its own reward here, will become a personal asset of the utmost importance when the material gives place to the spiritual life, and when that rest, so much longed for by the weary soul, is at last granted as the recompense and reward of those "who die in the Lord."

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